

1999

KANSAS PERFORMANCE TESTS WITH GRAIN SORGHUM HYBRIDS

REPORT OF PROGRESS 844

Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service

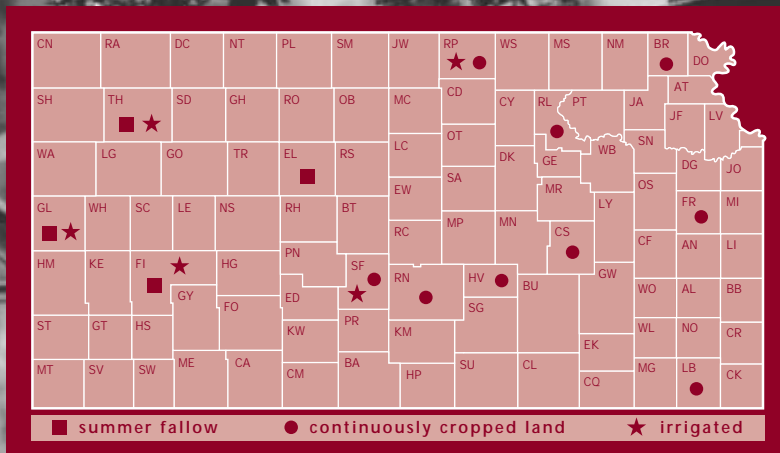
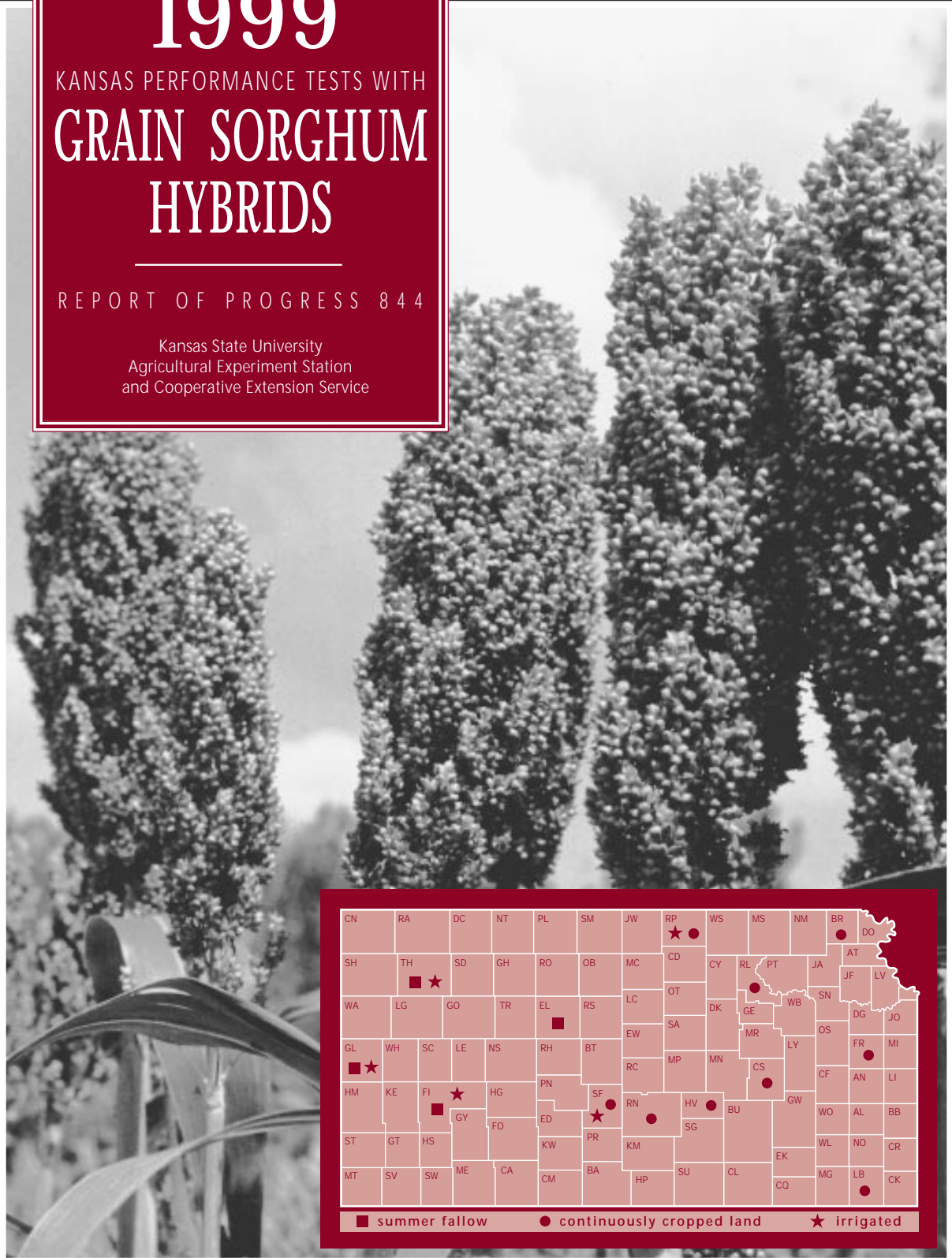


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1999 KANSAS GRAIN SORGHUM PERFORMANCE TESTS

INTRODUCTION

TEST OBJECTIVES AND PROCEDURES

Sorghum Performance Tests, conducted annually by the Kansas Agricultural Experiment Station, provide farmers, extension workers, and private research and sales personnel with unbiased agronomic information on many of the sorghum hybrids marketed in the state. Entry fees from private seed companies help finance the tests. Seed companies receive test announcements and entry forms in late January each year; deadlines for receipt of completed entry forms and seed are in early March. Because entry selection and location are voluntary, not all hybrids grown in the state are included in tests, and hybrids are not grown uniformly at all test locations.

Individual test discussions include summaries of growing-season weather data for each location. These data are from the nearest weather-reporting station and often are supplemented with information from the test site. Precipitation graphs include cumulative lines for 1999 and the 30-year normal in addition to the daily rainfall amounts since last fall. Temperature graphs include daily maximum and minimum temperatures compared with normal. Growing degree graphs include cumulative lines for 1999 and normal. All graphs include vertical lines indicating planting, heading, and harvest dates, if available. The graphs reveal general trends in precipitation and temperature compared to normal. For more detailed information, a table is included with monthly totals and averages for the growing season. Comparisons of the current year's weather with long-time averages often help explain unusual plant development patterns and inconsistent performance of individual hybrids over years.

Tan-plant sorghums have been tested in several locations for the past few years. Grain from tan-plant hybrids is desirable for human food consumption and poultry feed and may provide

additional income in some situations. The hybrids tested to date have been developed in Texas but have shown good adaptation in Kansas environments where the length of the growing season is adequate.

In 1999, seed-applied insecticide was requested for each entry, because some companies had difficulty supplying seed without it. It was up to participating companies to comply with this request, but most entries apparently were treated. Check hybrids were included at each location with and without seed-applied insecticide to estimate the potential effect of the insecticide. The insecticide appeared to confer little yield benefit at most locations. Look for comments under the description of growing conditions regarding the effect of the insecticide at each location. Each table also includes the check hybrids with seed-applied insecticide (G) and without (N).

Explanatory information is given preceding data summaries for each test. Tables 1-22 contain results from the grain sorghum performance test locations. Hybrids are listed in order of increasing days to half bloom and increasing grain moisture for the current year so hybrids of similar maturity appear together. Yield summaries following each group of tests (Tables 4, 8, 12, 16, 22) present current-year yield as a percent of the average for each location and summarize hybrid performance over the past few years in that region as the difference in bushels per acre from the average of three check hybrids. Figures 6-10 present similar information for yield, days to bloom, and harvest moisture in a graphical format. The 1999 entrants, entries, and some additional descriptive information provided by the entrants are listed in the Appendices.

Most tests are planted at a rate 30% to 40% above the desired population and only minimally thinned. Planting to stand includes hybrid differences in stand establishment and early-season vigor in the overall performance evaluation. These differences may or may not be genetically controlled but contribute to marketed

product performance in either case. Therefore, they are included in performance comparisons.

Tractor-powered, modified, air-planters were used for nearly all tests. Three or four plots (replications) of each hybrid were grown at each location in a randomized complete block design. Each harvested plot consisted of two rows trimmed to a specific length ranging from 20 to 30 feet at the different locations. Agronomists used specialized plot combines equipped with automatic weighing and sampling devices to harvest most tests.

Results for each grain sorghum test include *GRAIN YIELDS* reported as bushels per acre of shelled grain (56 lbs/bu) adjusted to a moisture content of 12.5%. *BUSHEL YIELDS* also are converted to *YIELDS AS PERCENTAGES OF THE TEST AVERAGE* to speed recognition of highest-yielding hybrids (more than 100%, the test average). The actual test average in bushels per acre is listed as the test average in the *YIELD AS % OF TEST AVERAGE* columns as a guide to actual yields. Hybrids yielding more than 100% of the test average year after year merit consideration, but adaptation to individual farms for appropriate maturity, stalk strength, and other factors also must be considered.

When appropriate, tables include the number of *LODGED* stalks. Both broken stalks and stalks leaning more than 45 degrees from vertical were considered *LODGED*, although most were harvestable with modern machinery.

Two characteristics contributed to estimations of relative maturity at most locations. *DAYS FROM PLANTING TO HALF BLOOM* is the number of days between planting and the date when half of the heads of a given hybrid have roughly half of the florets in bloom. *GRAIN MOISTURE* at harvest also may help categorize hybrids for relative maturity, when harvest is early enough to provide a range in moisture contents among entries. Entries are listed in order of increasing maturity based on days to half bloom and harvest moisture in the current year to facilitate comparison of hybrids of like maturity. Maturity can be critical when considering a sorghum hybrid for a specific cropping system.

The *GROWTH UNIT* or *GROWING DEGREE DAY* concept was developed to measure the amount of heat available for growth and

maturation. The formula used to generate the monthly totals in individual test discussions follows: Take the maximum temperature plus the minimum temperature for each day, divide by 2, and then subtract a base temperature of about 34 (actually 1° C was used in the calculations). The purpose is to describe temperatures for the season for comparison with previous years and other locations in explaining relative rates of plant development. Research by Dr. Richard Vanderlip and his students at Kansas State University has indicated an excellent relationship between the growth units generated by these calculations and the actual rate of plant development from blooming to physiological maturity. Growth unit accumulations for the current year are compared with the long-term average or 'normal' for each test.

Small differences in yield or other characteristics should not be overemphasized. Least significant differences (LSD's) are shown at the bottom of each table. Unless two entries differ by at least the LSD shown, little confidence can be placed in one being superior to the other in that character. The coefficient of variability (CV) can be used to estimate the degree of confidence one may have in published data from replicated tests. For yield estimates in this testing program, CV's below 10% generally indicate reliable, uniform data, whereas CV's of 10 to 15% are not uncommon and usually indicate that data are acceptable for the rough performance comparisons desired from these tests. Tests with CV's over 15% still may be useful, but hybrid comparisons lack precision.

1999 STATEWIDE GROWING CONDITIONS

Weather Summary

The two most important weather factors affecting sorghum production, soil moisture and temperature, are graphed for the season in Figures 1 and 2. Figures 3 and 4 illustrate the sorghum crop's condition and progress during the season and reflect the impacts of temperature and soil moisture extremes.

Soil moisture conditions in 1999 (Figure 1) were almost exactly the opposite of those in 1998. Extended rainfall during May and June delayed planting and slowed early crop development (Figure 4). Rainfall decreased in mid-July and became sporadic during most of the rest of the

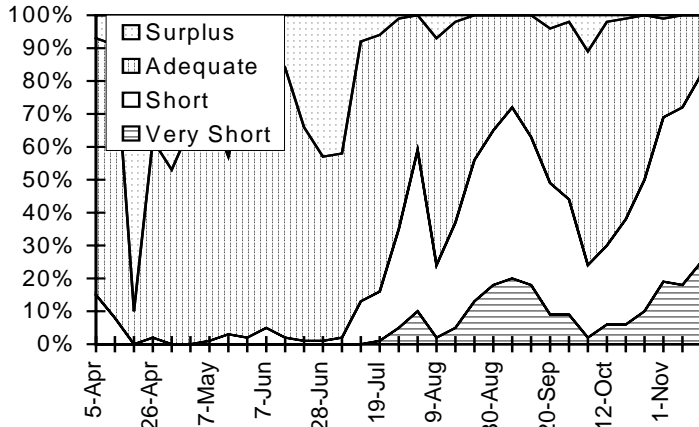


Figure 1. Statewide status of topsoil moisture.

growing season. By late October and during November, soil moisture was short or very short on over 70% of the crop acreage.

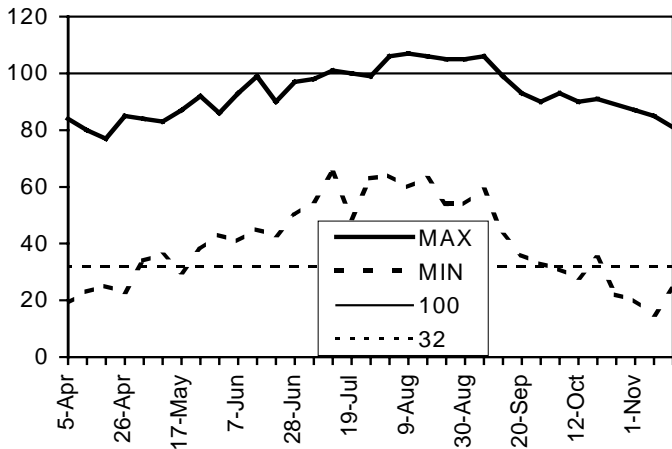


Figure 2. 1999 Kansas weekly maximum and minimum temperatures.

Warm temperatures accompanied the dry conditions beginning in July (Figure 2) and hastened crop development during the grain-filling and maturation period. General crop condition declined significantly during late July and August (Figure 3) as the crop was subjected to an extended hot, dry period. Temperatures were very mild throughout the fall, but freezing temperatures in early to mid October often prevented the complete maturation of late-planted sorghum. The mild, dry conditions facilitated a rapid harvest that eventually caught up with last year's, even though the crop was behind the 1998 crop for most of the season (Figure 4). (From Crop-Weather reports, Kansas Agricultural Statistics, Topeka)

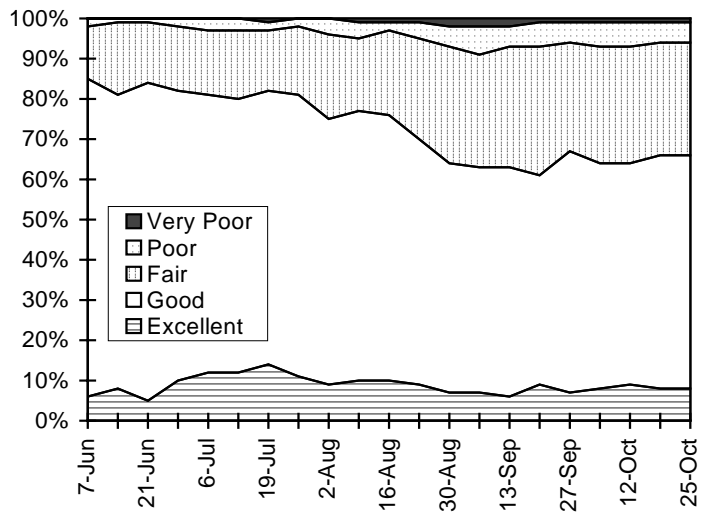


Figure 3. Condition of 1999 sorghum crop.

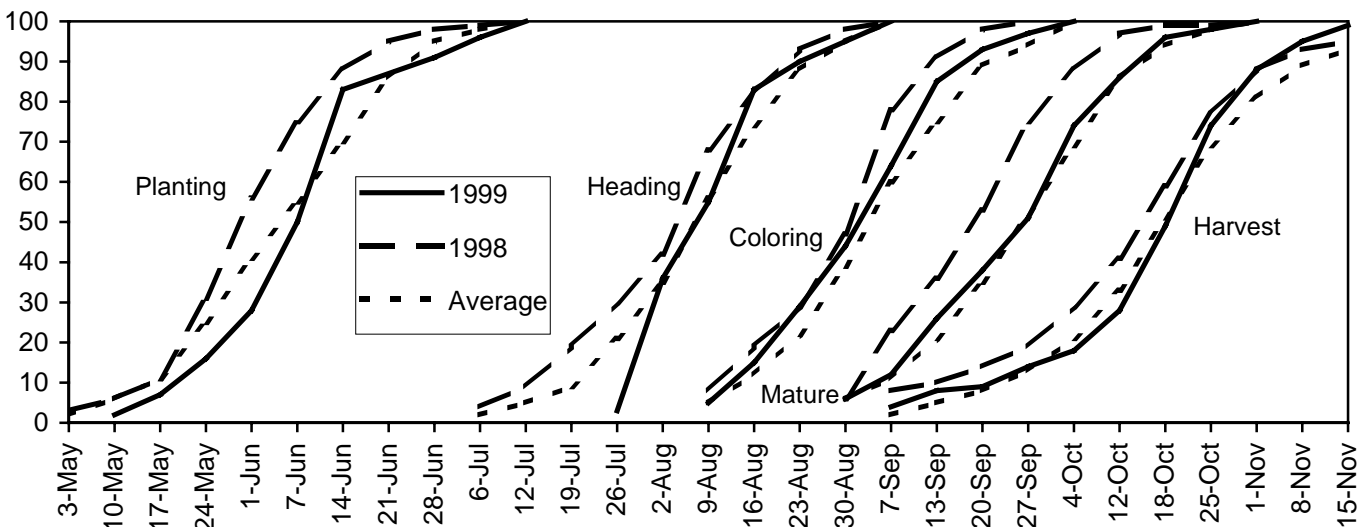


Figure 4. Progress of 1999 Kansas grain sorghum crop.

Insect Summary

Following 1998, when several pest species were present at damaging levels, this year was rather unusual in the overall lack of insect concerns. Greenbugs did not cause a serious threat, except for a very brief period in August when a buildup began to occur in southwest Kansas.

Corn leaf aphids were common in whorl stage sorghum, but head infestations, which were common during the previous year, did not reoccur. We think the difference can be traced to the unusually cool weather in July of 1998 - a factor that probably favors head infestations.

Chinch bugs were observable in many spots in eastern Kansas, but populations were usually low and caused little damage. We think chinch bugs are presently at the low point in the general 10-year cycle that they seem to follow. If past trends continue, populations will start to build gradually, especially if a series of dry spring periods occurs.

Both fall armyworms and corn earworms were extremely abundant in central Kansas in 1998; the former chews the foliage, and the latter destroys grain in the head. Fall armyworms were very scarce in Kansas and probably all the way to the Gulf coast in 1999. This was not surprising, but the low numbers of corn earworms are harder to explain. They had been present at damaging levels for 3 years in a row, and we were beginning to think that the increase in dryland corn acreage might be contributing to an increase in corn earworms during August in sorghum and soybeans. (From Leroy Brooks, Extension Entomologist, KSU Department of Entomology.)

Disease Summary

Warm, wet weather in June resulted in significant development of *Fusarium* seedling blight problems in the eastern two-thirds of the state. Some fields required replanting.

Sooty stripe disease was initially heavy in the eastern half of the state, but the drier weather in June and July slowed the development of the disease in most fields. Where susceptible hybrids were being grown, yield losses were generally in the 10% range.

There were widespread reports of lodging around the state. Both *Fusarium* stalk rot and charcoal rot were active in these fields. Dry fall weather in most areas kept the problem from being worse.

Wet weather resulted in the late planting of many fields in south central Kansas. The extremely dry weather during July and August further delayed crop development. As a result, a number of fields still had blooming tillers well into September when nighttime temperatures were cool. This resulted in the development of ergot on the tillers in a number of fields. Although yield loss was minimal, the sticky honeydew caused delays in harvesting. (From Doug Jardine, Extension Plant Pathologist, KSU Department of Plant Pathology.)

The November 10 Crops Report predicted a crop of 261.8 million bushels, down 1% from 1998. This production is from 3.4 million harvested acres, up 3% from last year. Sorghum acres and production were concentrated in central Kansas (Figure 5). Yield levels in southern districts tended to be lower than those in the central and northern districts. The highest yields were

recorded in the west central district at 90 bushels per acre. The predicted statewide average yield of 77 bushels per acre is 3 bushels lower than the final 1998 yield average.

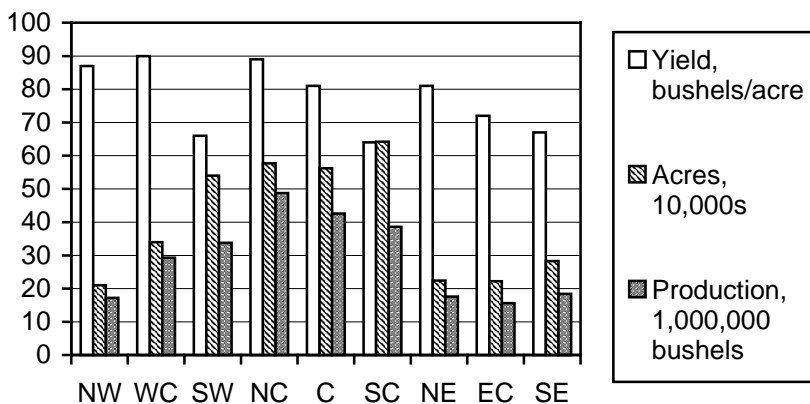


Figure 5. 1999 Kansas grain sorghum crop production by crop reporting district.

NORTHEASTERN KANSAS GRAIN SORGHUM TEST ON SILTY CLAY LOAM SOIL

COUNTY: BROWN

LOCATION: Cornbelt Experiment Field, Powhattan

TEST SITE: Grundy silty clay loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 110 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/19/99

HARVEST DATE: 10/8/99

COOPERATORS:

Larry Maddux, agronomist; Steve Milne and David Zeit, technicians

TARGET POPULATION: 55,000 plants/acre,

3.8 in. spacing

STAND (% of target): 98

YIELD: Average (bu/a): 123

Range (bu/a): 86 - 145

LSD (bu/a): 12

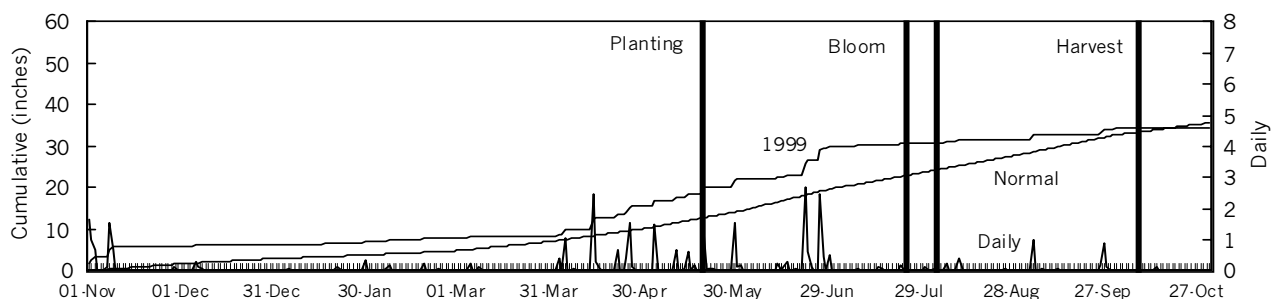
CV (%): 8

BLOOM DATES: 7/24/99 - 8/3/99

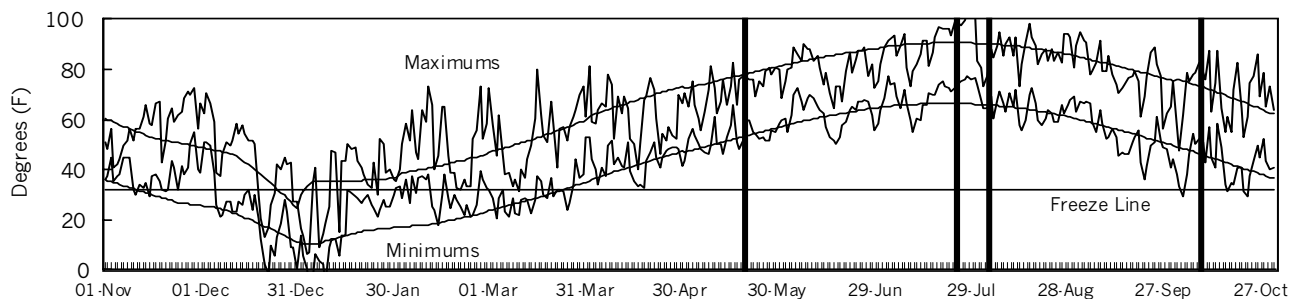
1999 GROWING CONDITIONS

Wet conditions at planting and in the following few weeks didn't seem to adversely affect stands but may have slowed early growth. Dry conditions predominated from mid-July through harvest. One of two check hybrids yielded significantly more when treated with seedborne insecticide, but the average responses of treated vs. untreated hybrids were not significantly different.

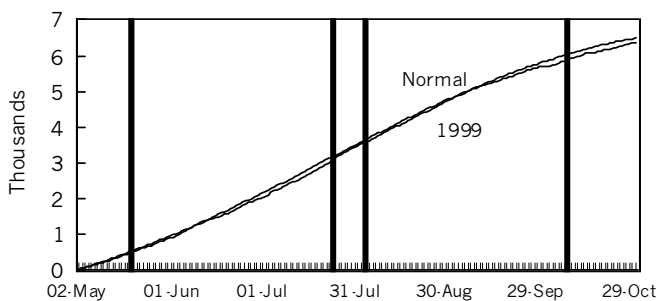
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	7.3	3.1	53	55	0	0
May	6.5	4.2	63	65	871	925
June	8.1	5.4	71	73	1122	1184
July	0.8	4.1	81	78	1450	1370
August	0.9	4.2	76	76	1295	1305
Sep.	2.4	4.7	65	68	938	1011
Oct.	0.3	3.0	57	56	698	692
Season Totals	26.1	28.6	66	67	6374	6487

TABLE 1. BROWN CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plant Ht. in.	Ldg %	Final Stand %	Hds per Plnt
MATURITY CHECK	C 305	97	101	87	99	95	80	90	90	69	13	66	14	57	47	1	89	1.2
NK	KS 585	121	103	--	112	--	99	92	--	69	14	66	14	59	45	0	99	1.1
FRONTIER	F270E	116	--	--	--	--	95	--	--	--	--	67	14	58	43	0	118	1.0
MATURITY CHECK	TX3042xTX2737	118	120	98	119	112	96	108	101	70	13	67	14	59	50	0	89	1.1
ASGROW	SENECA	114	104	--	109	--	93	93	--	70	13	68	14	59	41	0	95	1.0
ASGROW	A504	112	105	--	109	--	92	94	--	71	13	68	14	59	48	0	108	0.9
DEKALB	DK-35	118	104	93	111	105	96	93	96	71	14	68	14	59	46	0	110	1.1
GARST	5515	125	--	--	--	--	102	--	--	--	--	68	14	59	48	2	83	1.2
HOEGEMEYER	6055	118	111	--	114	--	96	99	--	71	13	68	14	58	46	0	100	1.0
MATURITY CHECK	RS 610	122	108	82	115	104	100	96	85	71	13	68	14	58	52	0	105	0.9
NC+	6B50	122	--	--	--	--	99	--	--	--	--	68	14	59	47	1	110	1.0
AGRIPRO	HY 2660	106	109	97	108	104	87	97	101	71	14	69	14	59	45	5	93	0.9
ASGROW	A459	112	116	--	114	--	92	104	--	71	13	69	14	59	49	0	105	1.0
GAUCHO CHECK	NC+271(G)	136	--	--	--	--	111	--	--	--	--	69	14	59	49	0	106	1.0
MATURITY CHECK	OK11xTX2741	85	93	95	89	91	70	83	98	71	14	69	14	58	41	2	76	1.1
ASGROW	A355	118	--	--	--	--	96	--	--	--	--	70	14	58	46	0	93	1.0
DEKALB	DK-44	122	99	88	111	103	99	89	91	73	13	70	14	59	46	0	110	0.9
GARST	5440	119	--	--	--	--	97	--	--	--	--	70	14	59	46	1	86	1.0
GAUCHO CHECK	DK-56(G)	137	--	--	--	--	112	--	--	--	--	70	14	59	50	0	105	1.0
HOEGEMEYER	6712	116	--	--	--	--	95	--	--	--	--	70	14	60	46	0	103	0.9
MIDLAND	M-4836	117	123	--	120	--	95	110	--	74	14	70	14	59	44	6	94	1.0
MYCOGEN	3700	127	--	--	--	--	103	--	--	--	--	70	14	59	50	4	109	1.0
MYCOGEN	3694	129	122	--	125	--	105	109	--	74	13	70	14	59	48	0	110	1.0
NK	K59-Y2	118	107	--	113	--	97	96	--	75	13	70	14	59	49	2	96	1.0
U.A.P.	UAP-740C	103	--	--	--	--	84	--	--	--	--	70	14	59	42	1	72	1.1
DEKALB	DK-45	126	118	104	122	116	103	106	107	74	14	70	15	59	48	0	110	0.9
DEKALB	DK-54	145	129	125	137	133	118	116	129	74	14	70	15	58	53	0	103	1.0
AGRIPRO	AP 2838	111	122	--	117	--	91	109	--	74	13	71	14	58	44	2	91	0.9
AGRIPRO	AP 2731	125	--	--	--	--	102	--	--	--	--	71	14	59	48	0	99	1.0
CARGILL	737	141	109	100	125	117	115	97	103	74	13	71	14	58	44	0	102	1.0
CARGILL	770Y	118	109	99	114	109	97	97	102	73	13	71	14	58	46	1	94	1.0
GAUCHO CHECK	NC+271(N)	118	--	--	--	--	97	--	--	--	--	71	14	59	48	0	92	1.1
NC+	7B47	132	--	--	--	--	108	--	--	--	--	71	14	58	45	0	97	1.0
U.A.P.	UAP-751B	115	--	--	--	--	94	--	--	--	--	71	14	59	42	0	82	1.2
U.A.P.	UAP-760C	121	--	--	--	--	99	--	--	--	--	71	14	59	48	0	112	0.9
DEKALB	DK-47	142	117	96	130	118	116	105	100	73	14	71	15	59	47	0	98	1.1
MATURITY CHECK	TX2752xTX430	132	127	95	130	118	108	114	98	73	14	71	15	59	46	3	94	1.1
CARGILL	837	137	125	110	131	124	112	112	114	75	13	72	14	59	48	0	115	1.0
GAUCHO CHECK	DK-56(N)	131	132	98	132	121	107	118	101	76	14	72	14	60	51	0	106	0.9
HOEGEMEYER	6884	97	104	--	101	--	79	93	--	74	14	72	14	58	43	1	101	0.9
MATURITY CHECK	TX2752xTX2783	97	130	98	114	108	79	117	101	76	14	72	14	60	50	16	105	0.9

(continued)

TABLE 1. BROWN CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days Blm	Grain to Moist. %	Days Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
MIDWEST SEED	256	134	122	105	128	120	109	109	109	75	14	72	14	59	53	0	80	1.1
NC+	7R83	136	130	105	133	124	111	116	109	75	13	72	14	58	47	0	104	1.0
PIONEER	8500	108	--	--	--	--	88	--	--	--	--	72	14	59	45	0	75	1.2
ASGROW	A571	133	119	--	126	--	109	106	--	75	13	73	14	58	48	0	103	1.0
WARNER	W-818-E	129	--	--	--	--	106	--	--	--	--	73	14	59	52	0	108	0.9
NK	K73-J6	125	113	100	119	113	102	101	103	75	14	73	15	59	47	0	76	1.1
PIONEER	82G63	124	120	--	122	--	101	108	--	76	14	73	15	59	49	3	101	1.0
CARGILL	833	133	114	--	124	--	108	102	--	77	13	74	14	60	44	0	120	0.9
CARGILL	730	131	93	111	112	111	107	83	115	77	13	74	14	59	45	0	115	0.9
MYCOGEN	444E	130	127	95	129	118	106	114	98	75	13	74	14	59	44	1	87	1.0
DEKALB	DK-53	145	125	--	135	--	118	112	--	77	14	74	15	59	52	0	116	1.0
MIDLAND	M-4774	118	115	--	117	--	96	103	--	77	14	74	15	58	48	1	92	1.0
PIONEER	84G62	137	119	--	128	--	112	106	--	75	14	74	15	58	47	1	92	1.0
MIDWEST SEED	G 571	119	--	90	--	--	97	--	93	--	--	75	15	57	48	0	91	1.0
DEKALB	X-758 EXP	134	--	--	--	--	110	--	--	--	--	76	15	58	48	0	102	1.0
MIDLAND	M-4757Y	122	114	--	118	--	100	102	--	77	14	76	15	59	49	1	92	1.0
MYCOGEN	1506	133	126	100	130	120	108	113	103	77	14	76	15	58	53	0	80	1.1
AVERAGES		123	112	97	117	110	123	112	97	74	13	71	14	59	47	1	98	1.0
CV(%)		8	8	8	--	--	8	8	8	--	--	2	3	2	3	198	10	11.3
LSD(0.05)**		12	10	10	--	--	10	9	10	--	--	2	0	1	2	2	12	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

NORTHEASTERN KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: RILEY

LOCATION: Agronomy North Farm, Manhattan

TEST SITE: Reading silt loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 150 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/26/99

HARVEST DATE: 10/6/99

COOPERATORS:

Kraig Roozeboom, agronomist; Karl Mannschreck, superintendent

TARGET POPULATION: 55,000 plants/acre,
3.8 in. spacing

STAND (% of target): 108

YIELD: Average (bu/a): 118

Range (bu/a): 98 - 137

LSD (bu/a): 13

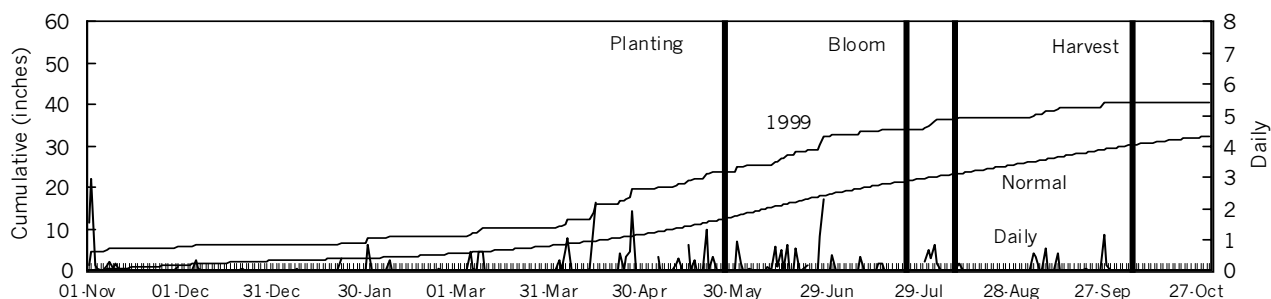
CV (%): 10

BLOOM DATES: 7/24/99 - 8/9/99

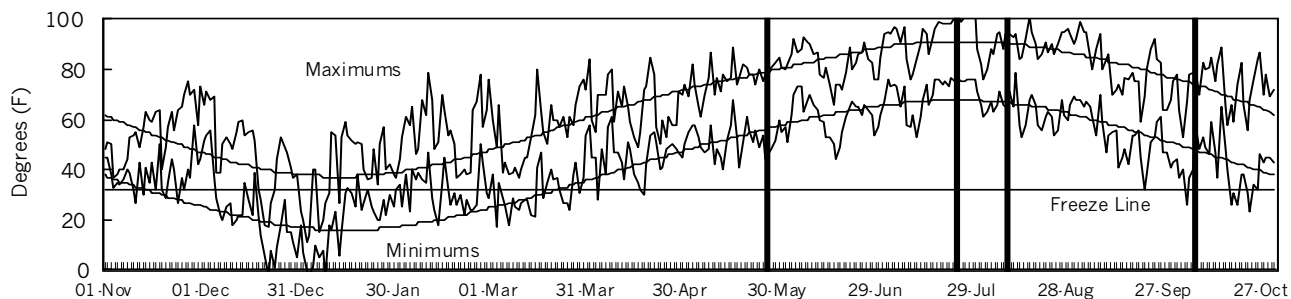
1999 GROWING CONDITIONS

Stands and early growing conditions were generally favorable. However, heavy rains in June and early July may have removed some of the applied nitrogen fertilizer. Dry, hot conditions prevailed during August and September. Seed-applied insecticide appeared to have a minimal effect on yields.

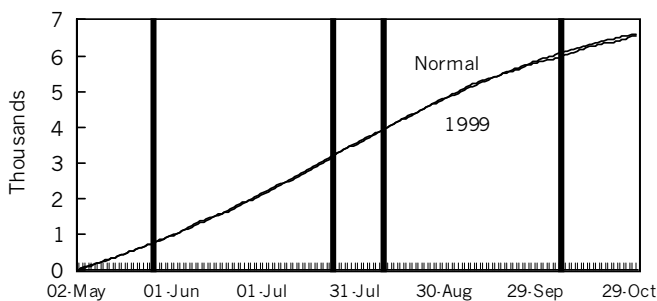
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	9.5	2.7	55	54	0	0
May	5.2	4.6	64	65	913	924
June	7.5	5.1	72	73	1130	1185
July	1.8	3.9	82	79	1498	1392
August	2.5	3.5	77	77	1329	1340
Sep.	3.8	3.8	66	69	959	1047
Oct.	0.1	2.8	57	57	723	710
Season Totals	30.4	26.3	68	68	6552	6596

TABLE 2. RILEY CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand per %	Hds per Plnt
					AVG.	AVG.												
NK	KS 585	105	110	--	107	--	89	95	--	59	15	59	14	59	47	--	113	1.0
ASGROW	A504	113	113	--	113	--	96	98	--	63	15	62	14	59	47	--	110	1.0
ASGROW	SENECA	110	104	--	107	--	94	90	--	61	15	62	14	59	40	--	110	1.0
FRONTIER	F270E	103	--	--	--	--	88	--	--	--	--	62	14	58	43	--	116	0.9
GAUCHO CHECK	NK KS 560Y(G)	110	--	--	--	--	94	--	--	--	--	62	14	59	42	--	114	1.0
GAUCHO CHECK	NK KS 560Y(N)	108	--	--	--	--	92	--	--	--	--	62	14	59	43	--	117	1.0
MATURITY CHECK	C 305	117	86	110	102	104	100	75	87	59	15	62	14	57	49	--	104	1.0
DEKALB	DK-35	125	103	118	114	116	107	90	94	61	16	62	15	58	47	--	118	1.0
MATURITY CHECK	TX3042xTX2737	120	107	103	114	110	102	93	82	61	16	62	15	59	53	--	106	1.0
ASGROW	A459	133	92	--	113	--	114	80	--	63	15	63	14	61	54	--	123	0.9
MATURITY CHECK	RS 610	118	82	118	100	106	100	71	93	61	15	64	13	56	49	--	98	1.0
ASGROW	A355	115	--	--	--	--	98	--	--	--	--	64	14	58	46	--	102	1.0
CARGILL	737	135	120	131	128	129	115	104	104	63	14	64	14	57	42	--	110	1.0
GAUCHO CHECK	NC+271(N)	116	--	--	--	--	99	--	--	--	--	64	14	59	50	--	112	0.9
U.A.P.	UAP-751B	108	--	--	--	--	92	--	--	--	--	64	14	58	44	--	94	1.0
U.A.P.	UAP-740C	98	--	--	--	--	83	--	--	--	--	64	14	57	43	--	89	0.9
GAUCHO CHECK	NC+271(G)	115	--	--	--	--	98	--	--	--	--	65	14	58	51	--	107	1.0
MATURITY CHECK	OK11xTX2741	108	83	110	96	100	92	72	87	63	15	65	14	59	42	--	102	1.0
U.A.P.	UAP-760C	122	--	--	--	--	104	--	--	--	--	65	14	59	51	--	110	1.0
GARST	5515	118	--	--	--	--	101	--	--	--	--	65	15	59	46	--	102	1.0
MYCOGEN	3700	137	--	--	--	--	117	--	--	--	--	65	15	60	52	--	114	1.0
HYTEST	HTG760	127	--	--	--	--	108	--	--	--	--	65	16	60	50	--	109	1.0
CARGILL	770Y	127	109	130	118	122	108	94	103	65	14	66	13	56	47	--	116	0.9
NK	K59-Y2	117	120	--	119	--	100	104	--	66	15	66	13	56	50	--	104	1.0
NC+	6C69	104	--	--	--	--	89	--	--	--	--	66	14	58	43	--	103	1.0
GARST	5440	122	--	--	--	--	104	--	--	--	--	66	15	60	46	--	114	1.0
MYCOGEN	444E	119	127	146	123	131	101	110	116	65	15	66	15	57	49	--	104	1.0
NC+	7B47	123	--	--	--	--	104	--	--	--	--	66	15	58	45	--	115	1.0
DEKALB	DK-47	127	134	147	131	136	108	117	116	65	16	66	16	60	49	--	119	1.0
PIONEER	8505	115	--	127	--	--	98	--	101	--	--	66	16	58	47	--	102	1.0
ASGROW	A571	124	113	--	119	--	106	98	--	68	15	67	14	57	50	--	120	1.0
CARGILL	730	110	125	128	117	121	93	108	101	66	14	67	14	57	47	--	116	0.9
MATURITY CHECK	TX2752xTX430	112	126	144	119	127	95	110	114	66	15	67	14	57	49	--	108	1.0
AGRIPRO	AP 2838	105	124	--	115	--	89	108	--	66	16	67	15	57	46	--	101	0.9
NK	K73-J6	114	124	138	119	125	97	107	109	67	15	67	15	57	52	--	102	1.0
NC+	7R83	123	122	142	123	129	105	106	112	68	14	68	14	57	48	--	113	1.0
CARGILL	833	121	125	--	123	--	103	109	--	67	15	68	15	57	48	--	124	1.0
DEKALB	DK-44	107	111	113	109	110	91	96	89	65	15	68	15	58	46	--	114	0.9
DEKALB	DK-45	124	125	131	125	127	106	108	103	65	15	68	15	57	54	--	114	1.0
HYTEST	HTG747	113	--	--	--	--	96	--	--	--	--	68	15	57	52	--	98	1.0
PIONEER	8500	110	112	128	111	117	94	97	101	64	16	68	15	60	48	--	110	0.9

(continued)

TABLE 2. RILEY CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
MATURITY CHECK	TX2752xTX2783	122	112	115	117	117	104	97	91	67	16	68	16	60	52	--	107	1.0
CARGILL	837	123	132	135	127	130	104	115	107	69	15	69	15	57	52	--	114	1.0
MYCOGEN	3694	125	129	--	127	--	106	112	--	67	16	69	16	59	50	--	113	0.9
TAN PLANT	ATX631xR9019	122	116	--	119	--	104	100	--	67	15	70	14	56	60	--	96	1.0
GAUCHO CHECK	DK-56(G)	118	--	--	--	--	100	--	--	--	--	70	16	60	55	--	115	0.9
WARNER	W-965-E	112	--	--	--	--	96	--	--	--	--	70	16	59	47	--	102	0.9
DEKALB	X-758 EXP	121	--	--	--	--	103	--	--	--	--	71	16	58	50	--	115	1.0
MYCOGEN	1506	115	127	130	121	124	98	110	103	67	16	71	16	55	62	--	96	1.0
TAN PLANT	ATX635xTX436	132	146	129	139	136	112	127	102	71	15	71	16	57	62	--	100	0.9
PIONEER	84G62	130	128	--	129	--	111	111	--	69	16	71	17	59	50	--	110	0.9
DEKALB	DK-54	124	132	135	128	130	105	114	107	69	16	72	16	57	59	--	119	1.0
MIDWEST SEED	256	112	--	--	--	--	96	--	--	--	--	72	16	55	62	--	99	0.9
GAUCHO CHECK	DK-56(N)	114	130	143	122	129	97	113	113	71	16	72	17	57	59	--	108	0.9
MIDWEST SEED	G 571	107	--	--	--	--	91	--	--	--	--	72	17	55	57	--	101	0.9
WARNER	W-818-E	110	--	--	--	--	94	--	--	--	--	72	17	58	57	--	104	0.9
TAN PLANT	ATX631xTX436	114	126	135	120	125	97	109	107	71	16	73	17	57	56	--	89	0.9
DEKALB	DK-53	135	128	--	132	--	115	111	--	71	17	74	20	57	58	--	113	1.0
AVERAGES		117	115	127	116	120	117	115	127	66	15	67	15	58	50	--	108	1.0
CV(%)		10	8	7	--	--	10	8	7	--	--	3	6	2	3	--	7	6.9
LSD(0.05)**		13	11	10	--	--	11	10	8	--	--	2	1	1	2	--	9	NS

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

NORTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: REPUBLIC

LOCATION: North Central Kansas Experiment Field, Belleville

TEST SITE: Crete silt loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 120 N 30 P₂O₅ 0 K₂O

PLANTING DATE: 5/28/99

HARVEST DATE: 10/13/99

COOPERATORS:

Barney Gordon, agronomist; Michael Larson and Allan Milner, technicians

TARGET POPULATION: 45,000 plants/acre,

4.6 in. spacing

STAND (% of target): 127

YIELD: Average (bu/a): 134

Range (bu/a): 111 - 160

LSD (bu/a): 7

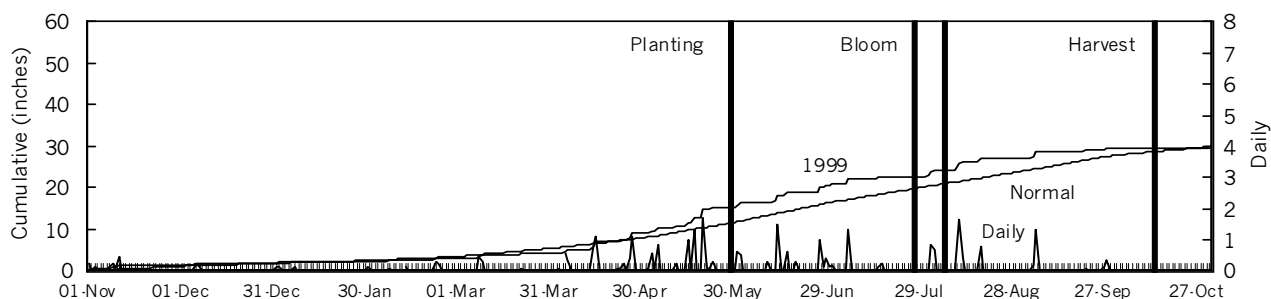
CV (%): 4

BLOOM DATES: 7/27/99 - 8/6/99

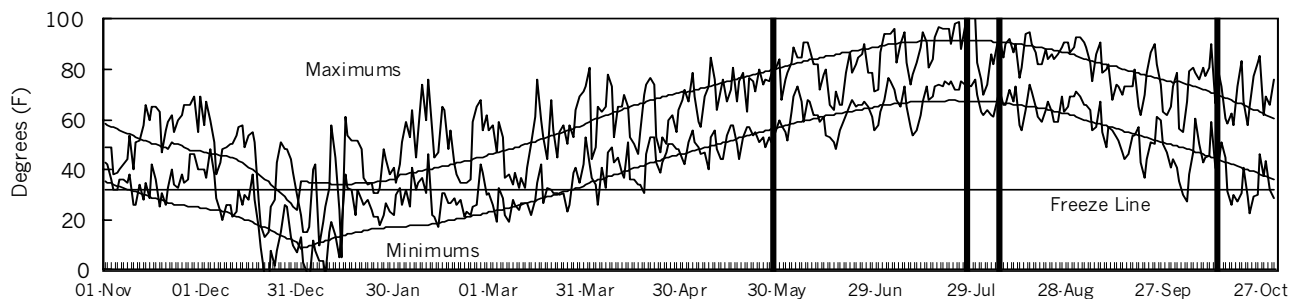
1999 GROWING CONDITIONS

Wet soil conditions delayed planting until late May. Stands were excellent in all plots. July rainfall was below normal, but timely rains in August relieved stress during heading and early grain fill. Diseases and insects appeared to cause minimal damage; however, check hybrids yielded about 13 bushels higher with seed-applied insecticide than without.

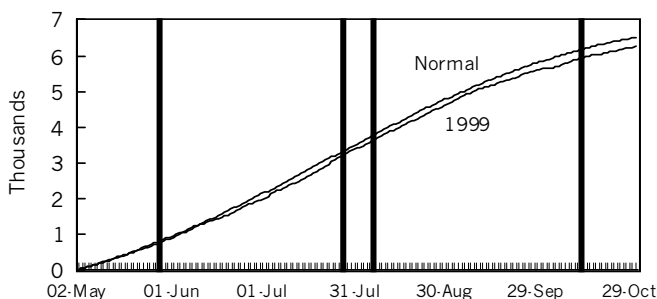
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	4.9	2.5	52	53	0	0
May	6.9	4.0	62	64	852	902
June	5.0	4.6	70	74	1090	1188
July	2.0	3.8	81	79	1442	1398
August	4.5	3.7	76	77	1293	1335
Sep.	2.1	3.9	65	67	931	1004
Oct.	0.0	2.0	55	56	652	678
Season Totals	25.4	24.5	66	67	6259	6505

TABLE 3. REPUBLIC CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand per %	Hds per Plnt
					AVG.	AVG.												
ASGROW	SENECA	128	114	--	121	--	96	90	--	62	14	60	13	61	32	--	129	1.1
DEKALB	DK-35	131	117	124	124	124	98	92	104	62	14	60	13	61	38	--	134	1.1
MATURITY CHECK	C 305	117	102	109	109	109	87	80	92	61	14	60	13	61	41	--	125	1.1
GARST	5515	136	--	--	--	--	102	--	--	--	--	61	13	61	39	--	126	1.1
MATURITY CHECK	OK11xTX2741	116	105	109	110	110	86	82	91	63	14	61	13	61	38	--	119	1.1
MATURITY CHECK	TX3042xTX2737	141	106	112	123	120	105	83	93	63	14	61	13	61	42	--	132	1.1
NK	KS 585	122	138	113	130	124	91	108	94	63	14	61	13	61	38	--	129	1.1
PIONEER	87G57	120	--	--	--	--	89	--	--	--	--	61	13	61	39	--	122	1.2
PIONEER	8505	129	116	131	123	125	96	91	109	64	14	62	13	61	39	--	129	1.1
CARGILL	647	125	122	121	123	123	93	95	101	66	14	63	13	62	40	--	131	1.1
DEKALB	DK-47	139	153	134	146	142	104	120	112	67	14	63	13	61	40	--	132	1.1
GAUCHO CHECK	NC+271(G)	137	--	--	--	--	102	--	--	--	--	63	13	61	41	--	129	1.1
ASGROW	A504	133	117	--	125	--	100	91	--	68	14	64	13	61	40	--	124	1.2
MYCOGEN	3700	139	--	--	--	--	103	--	--	--	--	64	13	61	41	--	132	1.1
DEKALB	DK-43A	133	154	--	144	--	99	121	--	67	14	65	13	61	38	--	129	1.1
U.A.P.	UAP-751B	123	--	--	--	--	92	--	--	--	--	65	13	61	39	--	116	1.2
DEKALB	DK-45	130	137	132	133	133	97	107	111	67	14	66	13	61	41	--	131	1.0
HOEGEMEYER	6055	126	113	--	119	--	94	89	--	66	14	66	13	61	38	--	132	1.0
MIDWEST SEED	256	152	146	122	149	140	114	114	102	67	14	66	13	62	43	--	123	1.1
MYCOGEN	444E	130	129	117	130	125	97	101	98	68	14	66	13	61	38	--	123	1.1
NC+	7R83	152	140	--	146	--	113	109	--	70	14	66	13	61	42	--	130	1.1
NC+	7B47	129	--	--	--	--	97	--	--	--	--	66	13	61	39	--	128	1.1
ASGROW	A571	146	139	--	142	--	109	108	--	70	14	67	13	61	42	--	131	1.1
CARGILL	730	130	131	124	131	128	97	102	104	70	14	67	13	61	39	--	131	1.0
CARGILL	770Y	132	121	129	126	127	98	95	108	68	14	67	13	61	39	--	129	1.1
DEKALB	X-758 EXP	148	--	--	--	--	110	--	--	--	--	67	13	61	41	--	132	1.1
DEKALB	DK-44	126	118	119	122	121	94	92	99	68	14	67	13	61	39	--	134	1.1
DEKALB	DK-54	156	139	134	147	143	116	109	112	70	14	67	13	61	42	--	126	1.1
GAUCHO CHECK	NC+271(N)	123	--	--	--	--	92	--	--	--	--	67	13	61	40	--	130	1.1
GAUCHO CHECK	DK-56(G)	143	--	--	--	--	107	--	--	--	--	67	13	61	42	--	131	1.1
GAUCHO CHECK	DK-56(N)	130	137	134	134	134	97	107	112	71	14	67	13	61	42	--	126	1.1
HOEGEMEYER	6712	131	--	--	--	--	98	--	--	--	--	67	13	61	39	--	133	1.1
MIDWEST SEED	G 571	124	--	106	--	--	93	--	88	--	--	67	13	61	41	--	125	1.1
MYCOGEN	3694	134	131	--	132	--	100	102	--	68	14	67	13	61	39	--	133	1.1
NC+	6B50	136	--	--	--	--	101	--	--	--	--	67	13	61	39	--	133	1.1
NK	K59-Y2	128	124	--	126	--	96	97	--	69	14	67	13	61	40	--	124	1.1
NK	K73-J6	143	136	121	140	133	107	106	101	68	14	67	13	61	41	--	119	1.2
PIONEER	84G62	160	148	--	154	--	119	116	--	70	14	67	13	61	40	--	131	1.1
U.A.P.	UAP-740C	111	--	--	--	--	83	--	--	--	--	67	13	61	37	--	111	1.1
U.A.P.	UAP-760C	128	--	--	--	--	95	--	--	--	--	67	13	61	40	--	124	1.1
ASGROW	A459	134	126	--	130	--	100	99	--	68	15	67	14	61	39	--	129	1.1

(continued)

TABLE 3. REPUBLIC CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
ASGROW	A355	134	--	--	--	--	100	--	--	--	--	67	14	61	39	--	113	1.1
CARGILL	627	131	124	122	128	126	98	97	102	67	14	68	13	61	39	--	131	1.1
CARGILL	697	130	126	--	128	--	97	98	--	69	14	68	13	61	39	--	132	1.0
CARGILL	737	140	138	128	139	135	104	108	107	70	14	68	13	61	36	--	132	1.0
GARST	5664	131	--	--	--	--	98	--	--	--	--	68	13	61	38	--	131	1.1
HOEGEMEYER	6884	128	131	--	130	--	96	102	--	69	14	68	13	61	39	--	128	1.1
MATURITY CHECK	TX2752xTX2783	138	120	115	129	124	103	94	96	71	14	68	13	61	41	--	124	1.1
MATURITY CHECK	RS 610	119	85	107	102	104	89	67	90	66	14	68	13	60	40	--	126	1.2
MATURITY CHECK	TX2752xTX430	132	126	126	129	128	99	98	105	70	14	68	13	60	40	--	120	1.2
MYCOGEN	1506	140	131	111	135	127	104	103	93	68	14	68	13	61	44	--	112	1.2
TAN PLANT	ATX631xR9019	156	140	--	148	--	117	109	--	69	14	68	13	61	43	--	123	1.1
TAN PLANT	ATX635xTX436	145	156	--	150	--	108	122	--	71	14	68	13	62	47	--	120	1.2
TRIUMPH	TR 481	140	142	--	141	--	105	111	--	71	14	68	13	61	42	--	126	1.1
TRIUMPH	TR 65-G	132	133	114	133	127	99	104	96	69	14	68	13	61	39	--	124	1.1
TAN PLANT	ATX631xTX436	138	142	--	140	--	103	111	--	70	14	69	13	61	43	--	117	1.1
DEKALB	DK-53	154	127	--	140	--	115	99	--	72	15	70	14	61	42	--	130	1.1
AVERAGES		134	128	120	131	127	134	128	120	68	14	66	13	61	40	--	127	1.1
CV(%)		4	4	3	--	--	4	4	3	--	--	1	3	1	4	--	4	5.2
LSD(0.05)**		7	8	5	--	--	5	6	4	--	--	1	0	0	2	--	7	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

TABLE 4. NORTHEAST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		BRD	RLD	RPD	AVG.	DYA (bu/a) ²	SE ³	N ⁴
TAN PLANT	ATX635xTX436	--	112	108	--	29 *	9	5
DEKALB	DK-54	118	105	116	113	25 *	4	9
PIONEER	84G62	112	111	119	114	25 *	6	6
DEKALB	DK-53	118	115	115	116	24 *	3	6
DEKALB	DK-47	116	108	104	109	22 *	5	9
NC+	7R83	111	105	113	110	21 *	3	8
CARGILL	837	112	104	--	--	18 *	4	6
TAN PLANT	ATX631xTX436	--	97	103	--	18	7	5
ASGROW	A571	109	106	109	108	17 *	4	6
GAUCHO CHECK	DK-56(N)	107	97	97	100	17 *	4	9
MIDWEST SEED	256	109	96	114	106	17 *	6	7
CARGILL	737	115	115	104	112	16 *	4	9
MYCOGEN	3694	105	106	100	104	16 *	4	6
DEKALB	DK-45	103	106	97	102	15 *	3	9
c MATURITY CHECK	TX2752xTX430	108	95	99	101	14 *	3	9
MYCOGEN	444E	106	101	97	101	14 *	3	9
MYCOGEN	1506	108	98	104	104	13 *	4	9
NK	K73-J6	102	97	107	102	13 *	4	9
CARGILL	730	107	93	97	99	10	5	9
CARGILL	770Y	97	108	98	101	9 *	2	9
NK	K59-Y2	97	100	96	97	8	4	6
ASGROW	A459	92	114	100	102	7	5	6
MATURITY CHECK	TX2752xTX2783	79	104	103	95	6	4	9
PIONEER	8505	--	98	96	--	6	3	6
ASGROW	A504	92	96	100	96	4	4	6
DEKALB	DK-35	96	107	98	100	4	2	9
NK	KS 585	99	89	91	93	4	6	7
PIONEER	8500	88	94	--	--	4	5	5
MATURITY CHECK	TX3042xTX2737	96	102	105	101	3	4	9
ASGROW	SENECA	93	94	96	94	1	3	6
DEKALB	DK-44	99	91	94	95	1	3	9
MIDWEST SEED	G 571	97	91	93	94	-2	3	5
c MATURITY CHECK	RS 610	100	100	89	96	-6 *	3	9
c MATURITY CHECK	C 305	80	100	87	89	-8 *	2	9
MATURITY CHECK	OK11xTX2741	70	92	86	83	-10 *	4	9
AGRIPRO	AP 2731	102	--	--	--	--	--	--
AGRIPRO	AP 2838	91	89	--	--	--	--	--
AGRIPRO	HY 2660	87	--	--	--	--	--	--
ASGROW	A355	96	98	100	98	--	--	--
CARGILL	627	--	--	98	--	--	--	--
CARGILL	647	--	--	93	--	--	--	--
CARGILL	697	--	--	97	--	--	--	--
CARGILL	833	108	103	--	--	--	--	--

(continued)

TABLE 4. NORTHEAST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		BRD	RLD	RPD	AVG.	DYA (bu/a) ²	SE ³	N ⁴
DEKALB	DK-43A	--	--	99	--	--	--	--
DEKALB	X-758 EXP	110	103	110	108	--	--	--
FRONTIER	F270E	95	88	--	--	--	--	--
GARST	5440	97	104	--	--	--	--	--
GARST	5515	102	101	102	101	--	--	--
GARST	5664	--	--	98	--	--	--	--
GAUCHO CHECK	DK-56(G)	112	100	107	106	--	--	--
GAUCHO CHECK	NC+271(G)	111	98	102	104	--	--	--
GAUCHO CHECK	NC+271(N)	97	99	92	96	--	--	--
GAUCHO CHECK	NK KS 560Y(G)	--	94	--	--	--	--	--
GAUCHO CHECK	NK KS 560Y(N)	--	92	--	--	--	--	--
HOEGEMEYER	6055	96	--	94	--	--	--	--
HOEGEMEYER	6712	95	--	98	--	--	--	--
HOEGEMEYER	6884	79	--	96	--	--	--	--
HYTEST	HTG747	--	96	--	--	--	--	--
HYTEST	HTG760	--	108	--	--	--	--	--
MIDLAND	M-4757Y	100	--	--	--	--	--	--
MIDLAND	M-4774	96	--	--	--	--	--	--
MIDLAND	M-4836	95	--	--	--	--	--	--
MYCOGEN	3700	103	117	103	108	--	--	--
NC+	6B50	99	--	101	--	--	--	--
NC+	6C69	--	89	--	--	--	--	--
NC+	7B47	108	104	97	103	--	--	--
PIONEER	82G63	101	--	--	--	--	--	--
PIONEER	87G57	--	--	89	--	--	--	--
TAN PLANT	ATX631xR9019	--	104	117	--	--	--	--
TRIUMPH	TR 481	--	--	105	--	--	--	--
TRIUMPH	TR 65-G	--	--	99	--	--	--	--
U.A.P.	UAP-740C	84	83	83	83	--	--	--
U.A.P.	UAP-751B	94	92	92	92	--	--	--
U.A.P.	UAP-760C	99	104	95	99	--	--	--
WARNER	W-818-E	106	94	--	--	--	--	--
WARNER	W-965-E	--	96	--	--	--	--	--
AVERAGES		123	117	134	125	--	--	--
CV(%)		8	10	4	--	--	--	--
LSD(0.05)**		10	11	5	--	--	--	--

¹ BRD = Brown Co. Test, Cornbelt Exp. Field, Powhattan

RLD = Riley Co. Test, Agronomy North Farm, Manhattan

RPD = Republic Co. Test, North Central Experiment Field, Belleville

² DYA = Differential Yielding Ability; average difference of hybrid yield compared to average of check hybrids in bushels per acre.

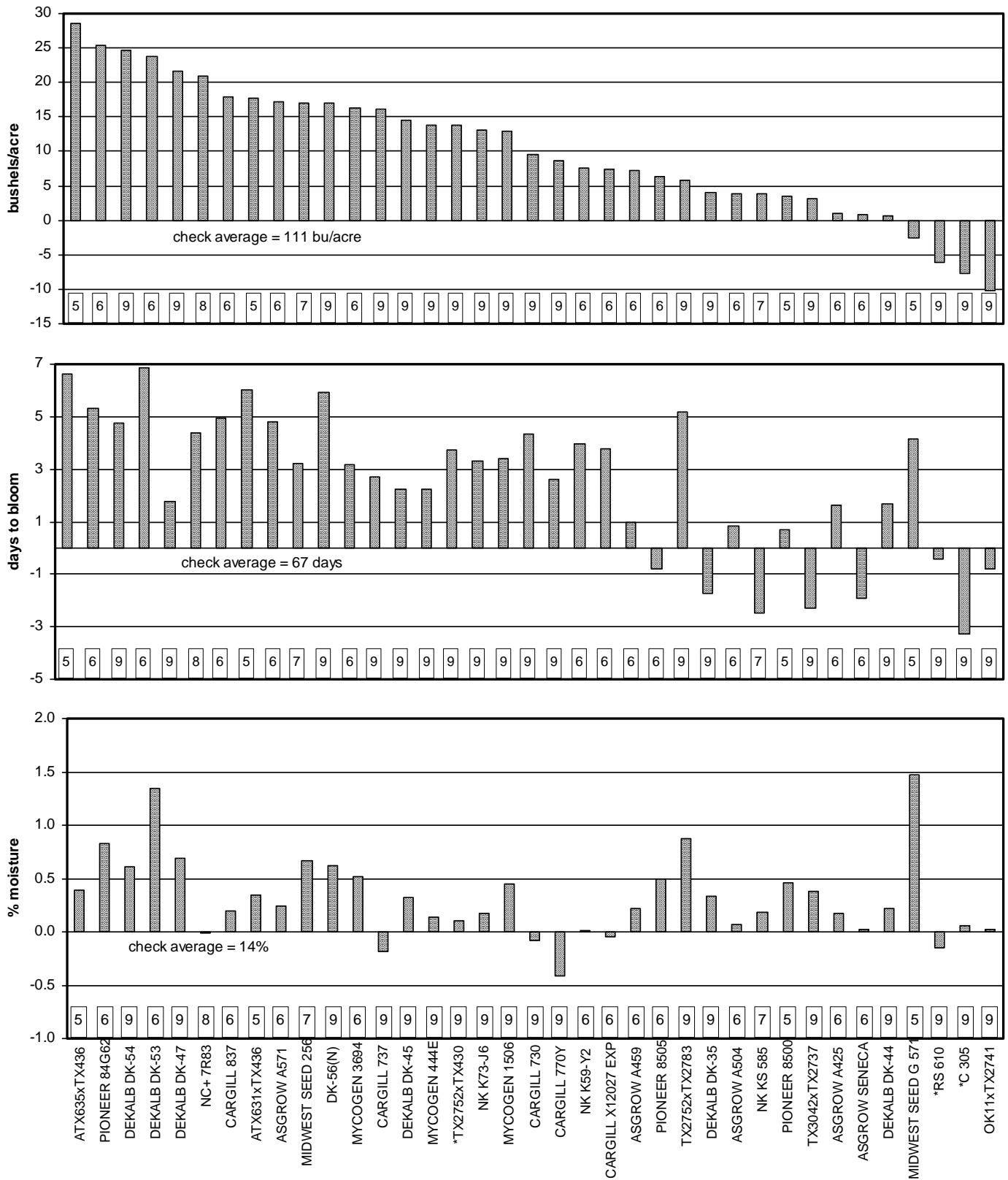
³ SE = Standard Error of DYA; measure of consistency of yield differences.

⁴ N = Number of tests where hybrid was compared with checks; DYA was calculated only for those with at least 5 comparisons.

^c Check hybrid; yield of each hybrid was compared to the average yield of these check hybrids.

* Statistically significantly different from the average of the check hybrids, which = 0 (P < 0.5).

FIGURE 6. NORTHEAST KANSAS SORGHUM HYBRID PERFORMANCE SUMMARY, 1997-1999.



Bars show differences between hybrid and average of check hybrids*. Values in boxes are numbers of tests where hybrids and checks were compared.

EAST CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: FRANKLIN

LOCATION: East Central Kansas Experiment Field, Ottawa

TEST SITE: Woodson silt loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 80 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/13/99

HARVEST DATE: 10/12/99

COOPERATORS:

Keith Janssen, agronomist; Jim Kimball, technician

TARGET POPULATION: 55,000 plants/acre,
3.8 in. spacing

STAND (% of target): NA

YIELD: Average (bu/a): 108

Range (bu/a): 89 - 126

LSD (bu/a): 13

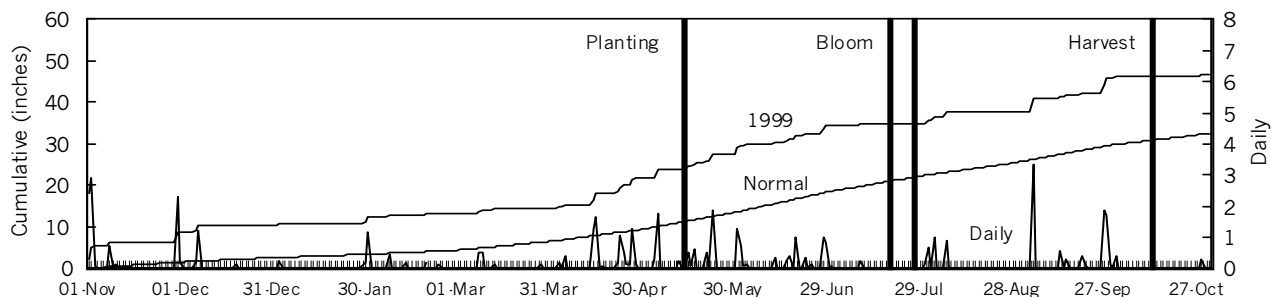
CV (%): 9

BLOOM DATES: 7/19/99 - 7/27/99

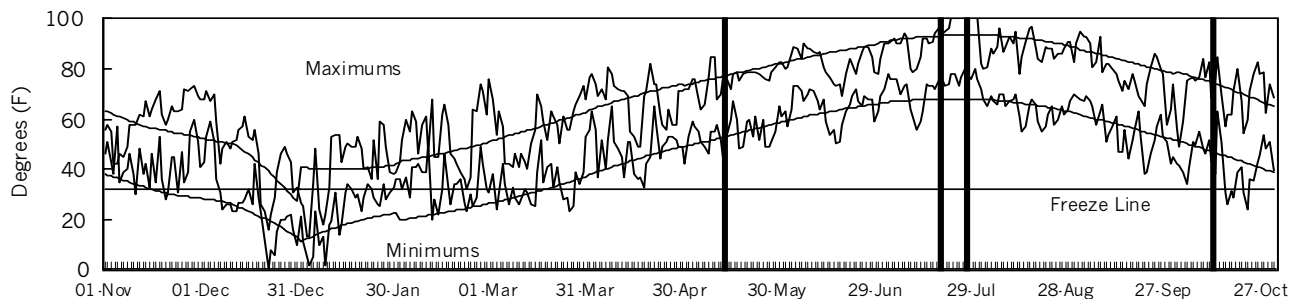
1999 GROWING CONDITIONS

The test was planted relatively early in wet soils during a short lull in spring rains. A driving rain the same day as planting caused stands to be somewhat variable. Additional tillers and flexible head size apparently made up for much of the stand variability. Seedborne insecticide caused no significant yield advantage.

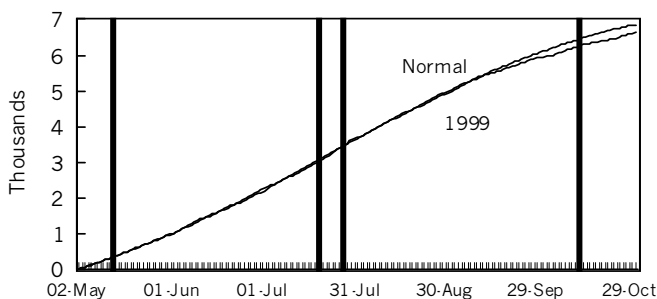
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	7.1	2.9	58	57	0	0
May	7.3	4.2	65	66	949	965
June	5.5	4.9	73	75	1185	1222
July	0.5	4.0	83	80	1518	1431
August	2.6	3.2	76	79	1309	1386
Sep.	8.4	4.1	67	70	983	1080
Oct.	0.8	2.7	56	59	693	773
Season Totals	32.1	26.0	68	69	6636	6856

TABLE 5. FRANKLIN CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999				Final Hds per Plnt		
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.		Ldg %	
					AVG.	AVG.												
MATURITY CHECK	C 305	96	90	122	93	102	89	92	85	62	15	67	14	57	52	--	--	--
MATURITY CHECK	TX3042xTX2737	97	110	137	104	115	90	112	96	63	14	68	13	59	56	--	--	--
NK	KS 585	111	101	139	106	117	102	103	97	63	15	68	14	60	51	--	--	--
TERRA	TR2	114	--	--	--	--	105	--	--	--	--	68	14	59	58	--	--	--
DEKALB	DK-35	102	101	130	101	111	94	103	91	64	14	69	13	59	49	--	--	--
TERRA	TR303	105	--	--	--	--	97	--	--	--	--	69	14	59	57	--	--	--
ASGROW	A504	103	109	--	106	--	95	111	--	66	13	70	12	58	52	--	--	--
ASGROW	A459	112	90	--	101	--	103	92	--	66	14	70	13	60	55	--	--	--
ASGROW	A355	108	--	--	--	--	99	--	--	--	--	70	13	59	50	--	--	--
DEKALB	DK-44	101	108	141	104	117	93	110	99	65	14	70	13	60	52	--	--	--
GAUCHO CHECK	NK KS 560Y(G)	116	--	--	--	--	107	--	--	--	--	70	13	59	46	--	--	--
GAUCHO CHECK	NK KS 560Y(N)	106	--	--	--	--	98	--	--	--	--	70	13	58	45	--	--	--
HOEGEMEYER	6055	121	102	--	111	--	112	104	--	66	14	70	13	59	50	--	--	--
MATURITY CHECK	RS 610	91	96	129	94	106	84	98	90	65	14	70	13	56	56	--	--	--
MATURITY CHECK	OK11xTX2741	95	81	128	88	101	88	83	89	64	14	70	13	58	47	--	--	--
MIDLAND	M-4876	95	--	--	--	--	88	--	--	--	--	70	13	58	43	--	--	--
NC+	6C69	99	--	--	--	--	91	--	--	--	--	70	13	59	45	--	--	--
TRIUMPH	TR 447	108	--	--	--	--	100	--	--	--	--	70	13	57	46	--	--	--
DELANGE	DSA 115C	97	95	126	96	106	89	97	88	65	14	70	14	59	45	--	--	--
MYCOGEN	3700	121	--	--	--	--	112	--	--	--	--	70	14	60	58	--	--	--
PIONEER	8500	102	106	138	104	115	94	108	97	64	15	70	14	60	50	--	--	--
DEKALB	DK-47	116	98	146	107	120	107	100	102	66	15	70	15	60	53	--	--	--
ASGROW	A571	108	103	--	105	--	99	105	--	69	14	71	12	58	54	--	--	--
GAUCHO CHECK	NC+271(G)	110	--	--	--	--	101	--	--	--	--	71	13	58	55	--	--	--
NC+	7B47	126	111	--	119	--	117	113	--	67	14	71	13	59	48	--	--	--
U.A.P.	UAP-760C	110	--	--	--	--	101	--	--	--	--	71	13	59	56	--	--	--
DEKALB	DK-45	116	114	163	115	131	107	116	114	65	15	71	14	59	55	--	--	--
GARST	5440	114	--	--	--	--	105	--	--	--	--	71	14	60	51	--	--	--
HOEGEMEYER	6884	109	95	--	102	--	100	97	--	66	15	71	14	60	50	--	--	--
HYTEST	HTG760	118	--	--	--	--	109	--	--	--	--	71	14	60	54	--	--	--
NK	KS 711Y	107	103	136	105	115	99	105	95	67	14	71	14	60	42	--	--	--
CARGILL	770Y	118	102	152	110	124	109	104	106	67	14	72	12	57	51	--	--	--
DELANGE	DSA 133	121	109	--	115	--	112	111	--	67	14	72	13	59	52	--	--	--
GAUCHO CHECK	NC+271(N)	113	--	--	--	--	104	--	--	--	--	72	13	59	54	--	--	--
HOEGEMEYER	6712	106	--	--	--	--	98	--	--	--	--	72	13	59	49	--	--	--
NK	K59-Y2	103	109	--	106	--	95	111	--	68	14	72	13	57	54	--	--	--
U.A.P.	UAP-751B	115	--	--	--	--	107	--	--	--	--	72	13	59	47	--	--	--
DEKALB	DK-54	120	111	165	115	132	110	113	115	69	15	72	14	59	60	--	--	--
GAUCHO CHECK	DK-56(G)	106	--	--	--	--	98	--	--	--	--	72	14	59	55	--	--	--
MIDWEST SEED	256	97	96	153	96	115	89	98	107	67	15	72	14	58	58	--	--	--
DEKALB	DK-53	113	106	--	110	--	105	108	--	68	15	72	15	60	53	--	--	--

(continued)

TABLE 5. FRANKLIN CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999				Final Hds		
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Stand %	per Plnt
		GAUCHO CHECK	DK-56(N)	105	99	147	102	117	97	101	103	69	15	72	15	60	56	--
TRIUMPH	TR 459	105	--	141	--	--	97	--	99	--	--	72	15	59	45	--	--	--
CARGILL	737	116	97	140	107	118	107	99	98	68	14	73	13	58	46	--	--	--
CARGILL	837	119	110	148	114	126	110	113	103	69	15	73	13	60	52	--	--	--
CARGILL	730	111	88	142	99	114	102	90	100	69	14	73	13	59	48	--	--	--
DEKALB	X-758 EXP	124	--	--	--	--	114	--	--	--	--	73	14	59	50	--	--	--
MATURITY CHECK	TX2752xTX2783	123	83	139	103	115	114	85	97	69	15	73	14	61	53	--	--	--
MIDLAND	M-4774	95	103	--	99	--	88	105	--	67	15	73	14	58	52	--	--	--
MIDLAND	M-4757Y	91	98	--	94	--	84	100	--	68	15	73	14	59	54	--	--	--
MIDWEST SEED	G 571	89	104	144	96	112	82	106	101	67	15	73	14	59	52	--	--	--
MYCOGEN	1506	108	115	147	111	123	99	117	103	67	15	73	14	58	59	--	--	--
ASGROW	A581	112	--	--	--	--	104	--	--	--	--	74	13	58	58	--	--	--
PIONEER	84G62	113	112	--	112	--	104	114	--	69	14	74	13	60	52	--	--	--
HOEGEMEYER	6766	98	105	143	102	115	91	107	100	68	14	74	14	59	52	--	--	--
HYTEST	HTG747	98	--	--	--	--	91	--	--	--	--	74	14	59	48	--	--	--
MATURITY CHECK	TX2752xTX430	121	111	140	116	124	112	113	98	70	14	74	14	59	51	--	--	--
NK	K73-J6	102	96	152	99	117	94	98	106	69	15	74	14	59	49	--	--	--
PIONEER	82G63	126	116	--	121	--	116	118	--	70	15	74	15	60	51	--	--	--
TRIUMPH	TR 481	98	89	148	93	112	90	91	104	70	15	75	15	59	53	--	--	--
AVERAGES		108	98	143	103	116	108	98	143	67	15	71	14	59	52	--	--	--
CV(%)		9	10	5	--	--	9	10	5	--	--	3	5	1	4	--	--	--
LSD(0.05)**		11	12	8	--	--	10	12	6	--	--	2	1	1	2	--	--	--

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTHEAST KANSAS GRAIN SORGHUM TEST ON SILTY CLAY SOIL

COUNTY: CHASE

LOCATION: ImMasche Research Center, Strong City

TEST SITE: Osage silty clay

1998 CROP: Corn

1997 CROP: Soybean

FERTILIZER (lbs/acre): 100 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/29/99

HARVEST DATE:

COOPERATORS:

Kraig Roozeboom, agronomist; Gene Eidmand, cooperater

TARGET POPULATION: 55,000 plants/acre,
3.8 in. spacing

STAND (% of target): 105

YIELD: Average (bu/a): 126

Range (bu/a): 108 - 138

LSD (bu/a): 9

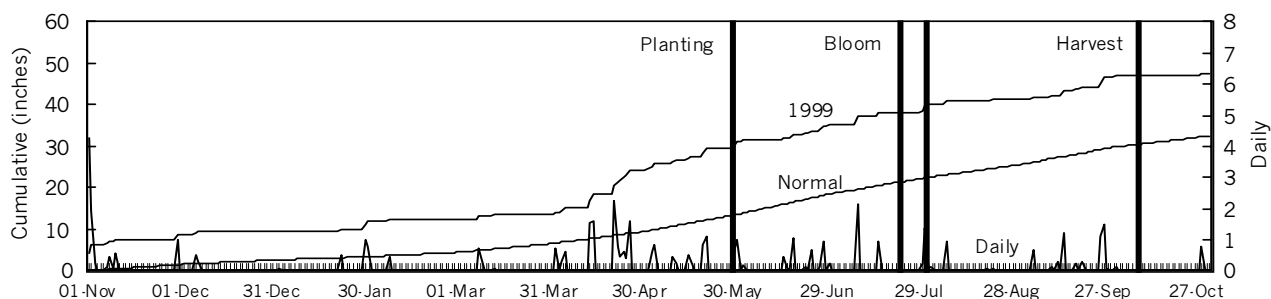
CV (%): 6

BLOOM DATES: 7/22/99 - 7/31/99

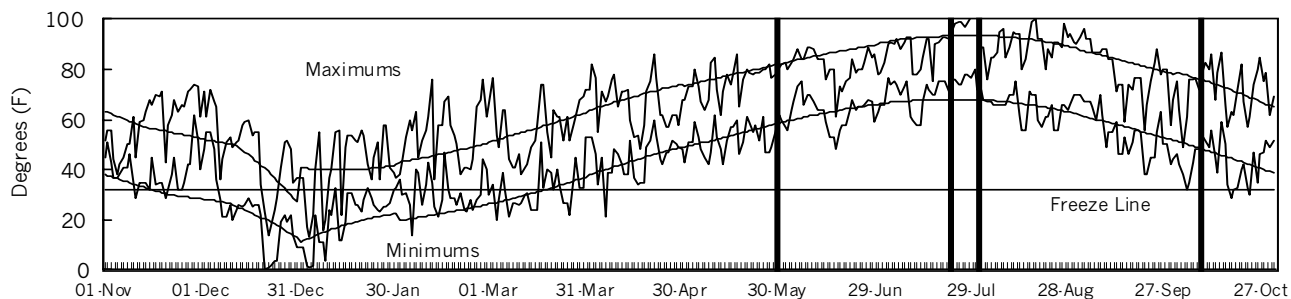
1999 GROWING CONDITIONS

Heavy spring rains and flooding delayed planting and caused a suboptimal seedbed, but excellent stands were established. The first half of the growing season was very wet, and the second half of the season was very hot and dry. Seed-applied insecticide appeared to cause no significant yield advantage.

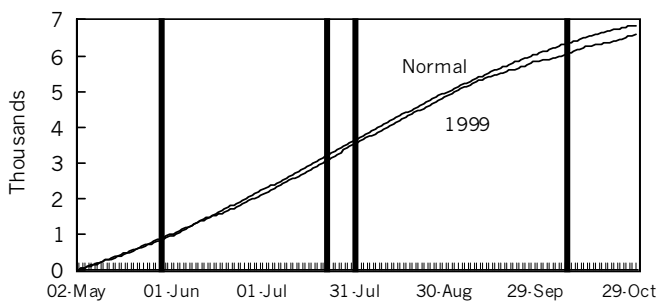
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	10.9	2.9	55	57	0	0
May	6.8	4.2	64	66	917	965
June	3.9	4.9	72	75	1146	1222
July	4.8	4.0	81	80	1467	1431
August	1.4	3.2	78	79	1353	1386
Sep.	5.6	4.1	67	70	975	1080
Oct.	0.9	2.7	57	59	726	773
Season Totals	34.2	26.0	68	69	6583	6856

TABLE 6. CHASE CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plant Ht. in.	Ldg %	Final Stand %	Hds per Plnt
MATURITY CHECK	C 305	113	72	135	93	107	90	76	95	56	15	54	13	56	50	--	102	1.0
MATURITY CHECK	TX3042xTX2737	115	104	145	109	121	91	110	102	58	16	56	14	58	54	--	99	1.1
DEKALB	DK-35	120	89	130	104	113	95	94	92	59	14	57	13	60	46	--	110	1.0
ASGROW	A355	128	--	--	--	--	101	--	--	--	--	58	13	58	48	--	90	1.1
ASGROW	A504	123	101	--	112	--	97	107	--	62	15	58	13	56	49	--	105	1.0
DELANGE	DSA 133	132	98	--	115	--	104	103	--	60	15	58	13	58	50	--	108	1.0
HOEGEMEYER	6055	123	118	--	120	--	97	124	--	59	15	58	13	58	50	--	101	1.0
MATURITY CHECK	OK11xTX2741	108	66	126	87	100	86	69	89	60	14	58	13	58	44	--	105	0.9
MATURITY CHECK	RS 610	119	65	129	92	105	94	69	92	59	16	58	14	56	55	--	105	1.0
ASGROW	A459	122	81	--	101	--	97	85	--	61	15	59	14	61	54	--	97	1.1
GARST	5440	131	--	--	--	--	104	--	--	--	--	59	14	60	50	--	101	1.0
HOEGEMEYER	6884	126	92	--	109	--	100	97	--	60	15	59	14	60	48	--	103	1.0
MYCOGEN	3700	136	--	--	--	--	108	--	--	--	--	59	14	60	54	--	111	0.9
PIONEER	8500	116	92	--	104	--	92	98	--	59	15	59	14	60	46	--	92	1.1
DELANGE	DSA 123Y	126	93	--	109	--	100	98	--	63	14	60	13	58	46	--	98	1.0
GAUCHO CHECK	NC+271(N)	120	--	--	--	--	95	--	--	--	--	60	13	59	52	--	106	1.0
HOEGEMEYER	6712	122	--	--	--	--	97	--	--	--	--	60	13	58	47	--	110	0.9
MATURITY CHECK	TX2752xTX430	138	93	151	116	128	109	98	107	62	14	60	13	58	47	--	96	1.0
MIDLAND	M-4725	122	106	--	114	--	97	111	--	63	14	60	13	58	52	--	106	0.9
NK	K59-Y2	124	95	--	110	--	98	101	--	63	15	60	13	56	54	--	99	1.0
NK	K73-J6	131	99	155	115	128	104	104	110	62	14	60	13	58	51	--	101	1.0
U.A.P.	UAP-751B	126	--	--	--	--	100	--	--	--	--	60	13	58	47	--	101	1.0
DEKALB	DK-44	130	88	113	109	110	103	92	80	61	15	60	14	60	47	--	105	1.1
DEKALB	DK-45	136	114	136	125	129	108	121	96	61	15	60	14	59	51	--	107	0.9
GAUCHO CHECK	NC+271(G)	123	--	--	--	--	98	--	--	--	--	60	14	58	52	--	106	1.0
HOEGEMEYER	6874	136	81	150	109	123	108	86	106	62	15	60	14	60	50	--	107	1.0
MIDLAND	M-4876	109	119	--	114	--	86	126	--	62	15	60	14	58	42	--	88	0.9
TRIUMPH	TR 459	120	--	--	--	--	95	--	--	--	--	60	14	60	43	--	103	0.9
U.A.P.	UAP-760C	123	--	--	--	--	98	--	--	--	--	60	14	58	52	--	96	1.1
DEKALB	DK-47	138	78	157	108	124	110	82	111	62	16	60	15	60	49	--	117	1.0
MATURITY CHECK	TX2752xTX2783	133	99	148	116	127	106	105	105	63	16	60	15	61	53	--	103	0.9
ASGROW	A571	134	108	--	121	--	107	113	--	64	15	61	13	58	49	--	108	1.0
MYCOGEN	1506	132	106	153	119	131	105	112	108	62	15	61	14	58	56	--	106	0.9
AGRIPRO	AP 2731	122	--	--	--	--	97	--	--	--	--	61	15	59	51	--	109	1.0
DEKALB	DK-54	135	123	153	129	137	107	130	108	65	16	61	15	58	55	--	100	1.1
ASGROW	A581	127	--	--	--	--	101	--	--	--	--	62	14	59	54	--	110	0.9
MIDLAND	M-4836	121	107	--	114	--	96	113	--	65	15	62	14	60	47	--	107	0.9
PIONEER	84G62	132	97	--	114	--	105	102	--	64	15	62	14	61	50	--	106	0.9
PIONEER	82G63	130	99	--	115	--	103	105	--	65	15	62	14	60	53	--	93	1.0
DEKALB	X-758 EXP	133	--	--	--	--	105	--	--	--	--	62	15	59	46	--	97	1.1
GAUCHO CHECK	DK-56(N)	122	90	144	106	119	97	95	102	65	16	62	15	59	53	--	106	1.0
GAUCHO CHECK	DK-56(G)	127	--	--	--	--	101	--	--	--	--	62	15	60	55	--	106	1.0
DEKALB	DK-53	138	133	--	135	--	109	140	--	64	16	63	15	60	51	--	106	1.0
TRIUMPH	TR 481	127	--	--	--	--	101	--	--	--	--	63	15	59	53	--	108	0.8
AVERAGES		126	95	141	110	121	126	95	141	62	15	60	14	59	50	--	103	1.0
CV(%)		6	16	7	--	--	6	16	7	--	--	1	4	1	3	--	11	13.9
LSD(0.05)**		8	26	11	--	--	7	27	8	--	--	1	1	1	2	--	NS	NS

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTHEAST KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: LABETTE

LOCATION: Southeast Agricultural Research Center, Parsons

TEST SITE: Parsons silt loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 110 N 60 P₂O₅ 60 K₂O

PLANTING DATE: 7/7/99

HARVEST DATE: 11/2/99

COOPERATORS:

Kenneth Kelley, agronomist

TARGET POPULATION: 45,000 plants/acre,

4.6 in. spacing

STAND (% of target): 103

YIELD: Average (bu/a): 54

Range (bu/a): 32 - 73

LSD (bu/a): 7

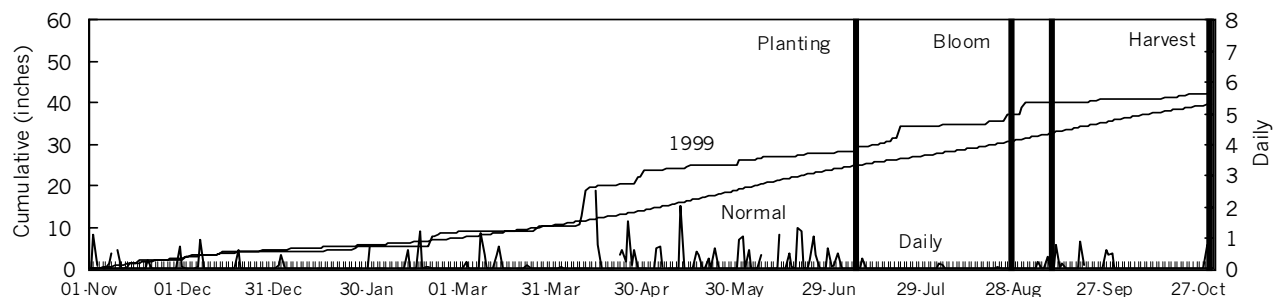
CV (%): 11

BLOOM DATES: 8/27/99 - 9/9/99

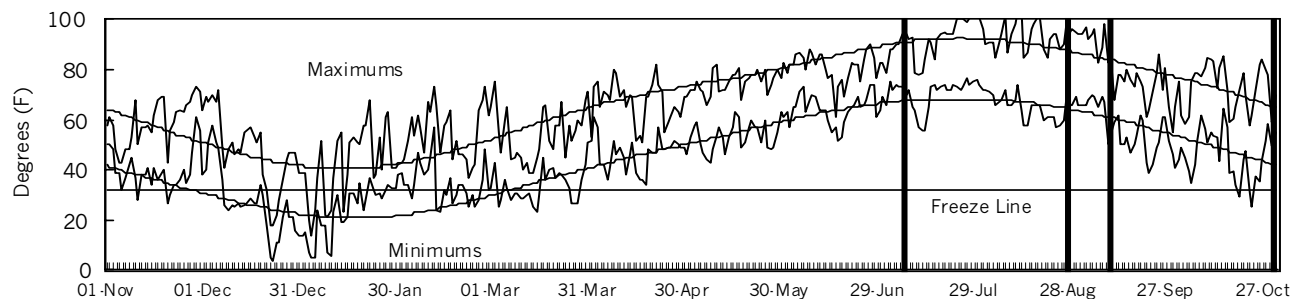
1999 GROWING CONDITIONS

Heavy rains and wet soils delayed planting until early July. Hot, dry conditions predominated in July and August; however, September rains benefited heading and grain fill. Yields were lower than normal but better than might be expected with the late planting date. Late-maturing hybrids sustained some bird damage before harvest. A killing frost in October cut short the maturation of late-maturing hybrids. Seed-applied insecticides had no significant effect on hybrid yields.

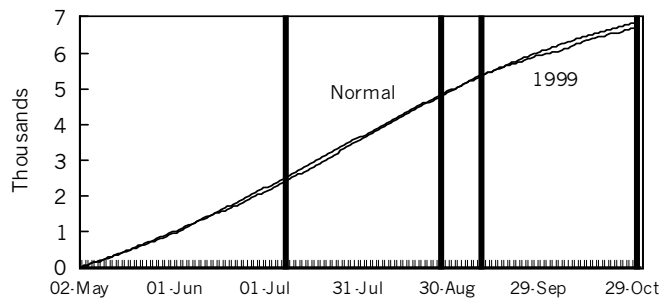
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	7.2	3.7	57	58	0	0
May	6.6	5.0	64	66	916	965
June	9.0	4.7	73	75	1159	1215
July	1.0	3.5	81	80	1462	1418
August	0.5	3.9	80	78	1411	1371
Sep.	4.3	4.5	67	70	1002	1095
Oct.	0.8	3.8	59	60	790	791
Season Totals	29.3	29.2	69	69	6739	6853

TABLE 7. LABETTE CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plant Ht. in.	Final Ldg %	Hds Stand per Plnt	
MATURITY CHECK	C 305	51	109	127	80	96	95	82	92	53	15	51	18	56	48	--	102	1.1
MATURITY CHECK	TX3042xTX2737	65	125	143	95	111	121	94	104	55	15	54	18	57	47	--	119	1.0
NK	KS 585	73	127	132	100	111	135	96	96	55	15	54	18	59	41	--	113	1.1
TERRA	TR303	54	--	--	--	--	100	--	--	--	--	54	18	57	49	--	99	1.1
HOEGEMEYER	6055	61	130	--	95	--	113	98	--	57	15	55	18	56	43	--	101	1.0
MATURITY CHECK	OK11xTX2741	62	115	126	88	101	115	87	92	56	15	55	18	58	40	--	93	1.1
MATURITY CHECK	RS 610	62	114	130	88	102	115	86	95	56	15	55	19	56	46	--	103	1.1
ASGROW	A355	57	--	--	--	--	107	--	--	--	--	55	20	55	42	--	75	1.2
PIONEER	8500	62	126	148	94	112	115	96	107	57	15	56	18	58	44	--	112	1.1
TRIUMPH	TR 447	61	--	--	--	--	113	--	--	--	--	56	18	56	39	--	91	1.1
DELANGE	DSA 133	68	135	--	101	--	127	102	--	59	15	57	19	56	42	--	116	1.0
U.A.P.	UAP-751B	65	--	--	--	--	121	--	--	--	--	57	19	56	39	--	84	1.2
CARGILL	737	55	132	141	94	110	103	100	102	60	15	58	19	56	39	--	86	1.1
DEKALB	DK-35	63	123	133	93	106	118	93	96	57	15	58	19	57	39	--	119	1.0
GARST	5440	64	--	--	--	--	120	--	--	--	--	58	20	56	42	--	104	1.1
GAUCHO CHECK	NK KS 560Y(N)	61	--	--	--	--	113	--	--	--	--	58	20	56	35	--	119	1.0
GAUCHO CHECK	NK KS 560Y(G)	63	--	--	--	--	116	--	--	--	--	58	20	56	37	--	108	1.1
MIDLAND	M-4876	56	--	--	--	--	104	--	--	--	--	58	20	56	38	--	78	1.2
DEKALB	DK-45	55	145	140	100	113	101	109	102	60	16	59	20	55	44	--	106	1.0
GARST	5515	59	--	--	--	--	110	--	--	--	--	59	20	56	42	--	103	1.0
MYCOGEN	3700	68	--	--	--	--	127	--	--	--	--	59	20	54	43	--	113	1.1
NC+	7B47	56	142	--	99	--	104	107	--	60	16	59	21	54	36	--	115	1.0
CARGILL	837	62	143	--	102	--	115	108	--	62	15	60	19	56	44	--	112	1.0
NC+	6C69	56	--	--	--	--	104	--	--	--	--	60	19	54	39	--	100	1.1
AGRIPRO	AP 2731	51	--	--	--	--	95	--	--	--	--	60	20	55	44	--	108	1.0
ASGROW	A459	54	129	--	91	--	100	97	--	60	16	60	20	56	45	--	104	1.1
CARGILL	730	63	134	143	99	113	118	101	104	62	16	60	20	55	41	--	127	1.0
DELANGE	DSA 123Y	60	134	--	97	--	112	101	--	62	16	60	20	53	36	--	98	1.1
GAUCHO CHECK	NC+271(G)	53	--	--	--	--	99	--	--	--	--	60	20	54	40	--	101	1.1
HOEGEMEYER	6884	60	136	--	98	--	112	103	--	60	16	60	20	55	39	--	111	1.1
NK	K73-J6	48	133	146	90	109	90	100	106	61	16	60	20	54	43	--	90	1.1
TRIUMPH	TR 459	51	--	--	--	--	94	--	--	--	--	60	20	55	39	--	77	1.2
GAUCHO CHECK	NC+271(N)	49	--	--	--	--	91	--	--	--	--	60	21	52	40	--	103	1.1
HOEGEMEYER	6766	55	131	137	93	108	102	99	100	61	17	60	21	55	43	--	115	1.0
MATURITY CHECK	TX2752xTX430	63	141	150	102	118	118	106	109	61	16	60	21	53	39	--	94	1.1
CARGILL	770Y	54	135	145	94	111	100	102	105	62	16	61	20	54	40	--	110	1.0
MATURITY CHECK	TX2752xTX2783	44	145	138	94	109	81	109	101	63	16	61	20	54	44	--	100	1.1
MYCOGEN	1506	46	143	165	95	118	86	108	120	62	16	61	20	54	47	--	100	1.0
U.A.P.	UAP-760C	52	--	--	--	--	96	--	--	--	--	61	20	54	39	--	116	1.0
DEKALB	DK-53	59	154	--	107	--	110	117	--	63	17	61	21	53	43	--	123	1.0
HOEGEMEYER	6712	49	--	--	--	--	90	--	--	--	--	61	21	52	36	--	113	1.0

(continued)

TABLE 7. LABETTE CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
MIDLAND	M-4774	43	134	--	89	--	81	102	--	61	17	61	21	55	42	--	103	1.1
NK	KS 711Y	56	129	110	93	98	104	98	80	61	16	61	21	55	38	--	98	1.2
ASGROW	A571	62	143	--	103	--	115	108	--	64	16	62	20	54	42	--	118	1.0
DEKALB	DK-47	45	136	153	91	111	83	103	111	62	16	62	20	54	41	--	109	1.0
DEKALB	DK-44	44	130	122	87	99	83	98	88	62	16	62	20	55	39	--	105	1.0
TERRA	TR2	40	--	--	--	--	75	--	--	--	--	62	20	53	45	--	96	1.1
AGRIPRO	AP 2838	58	130	--	94	--	108	98	--	62	16	62	21	52	41	--	91	1.1
DEKALB	X-758 EXP	51	--	--	--	--	94	--	--	--	--	62	21	52	42	--	97	1.2
NK	K59-Y2	36	131	--	84	--	68	99	--	62	16	62	21	51	42	--	103	1.1
PIONEER	84G62	55	162	--	108	--	102	122	--	63	17	62	21	51	42	--	101	1.1
TERRA	TR440	54	--	--	--	--	100	--	--	--	--	62	21	52	47	--	101	1.1
TRIUMPH	TR 481	41	136	--	88	--	76	103	--	63	17	62	21	52	46	--	97	1.1
ASGROW	A504	49	132	--	91	--	92	100	--	62	17	62	22	52	43	--	94	1.1
MIDLAND	M-4836	49	137	--	93	--	92	104	--	63	16	63	21	53	39	--	98	1.1
DEKALB	DK-54	36	162	164	99	121	66	123	119	65	16	64	19	50	46	--	107	1.0
ASGROW	A581	35	--	--	--	--	66	--	--	--	--	64	21	49	44	--	108	1.1
DELANGE	DSA 144	32	136	--	84	--	59	103	--	65	16	64	21	51	42	--	83	1.1
PIONEER	82G63	40	166	--	103	--	74	126	--	65	17	64	21	49	43	--	114	1.0
GAUCHO CHECK	DK-56(G)	40	--	--	--	--	74	--	--	--	--	65	20	51	47	--	112	1.1
GAUCHO CHECK	DK-56(N)	46	141	141	94	109	86	107	103	66	17	65	21	51	46	--	113	1.0
AVERAGES		54	132	138	93	108	54	132	138	61	16	60	20	54	42	--	103	1.1
CV(%)		11	6	3	--	--	11	6	3	--	--	2	2	2	4	--	11	10.2
LSD(0.05)**		7	9	6	--	--	13	7	4	--	--	1	1	2	2	--	14	NS

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

TABLE 8. SOUTHEAST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		FRA	CHA	LAB	AVG.	DYA (bu/a) ²	SE ³	N ⁴
DEKALB	DK-53	105	109	110	108	20	8	6
DEKALB	DK-54	110	107	66	95	20 *	7	9
PIONEER	82G63	116	103	74	98	16	9	6
DEKALB	DK-45	107	108	101	105	15 *	5	9
PIONEER	84G62	104	105	102	104	15	6	6
CARGILL	837	110	--	115	--	14 *	3	5
c MATURITY CHECK	TX2752xTX430	112	109	118	113	14 *	2	9
MYCOGEN	1506	99	105	86	97	14 *	4	9
ASGROW	A571	99	107	115	107	13 *	5	6
DELANGE	DSA 133	112	104	127	114	13 *	2	6
HOEGEMEYER	6055	112	97	113	107	12	6	6
CARGILL	770Y	109	--	100	--	10	4	6
DEKALB	DK-47	107	110	83	100	9 *	4	9
NK	K73-J6	94	104	90	96	8	4	9
MATURITY CHECK	TX2752xTX2783	114	106	81	100	7	5	9
ASGROW	A504	95	97	92	95	6	5	6
CARGILL	730	102	--	118	--	6	4	6
CARGILL	737	107	--	103	--	6	3	6
GAUCHO CHECK	DK-56(N)	97	97	86	93	6	3	9
HOEGEMEYER	6884	100	100	112	104	6	3	6
MATURITY CHECK	TX3042xTX2737	90	91	121	101	6	3	9
NK	KS 585	102	--	135	--	6 *	2	7
DELANGE	DSA 123Y	--	100	112	--	5	4	5
PIONEER	8500	94	92	115	100	5	3	8
HOEGEMEYER	6766	91	--	102	--	4	3	6
NK	K59-Y2	95	98	68	87	3	6	6
MIDLAND	M-4836	--	96	92	--	2	9	5
ASGROW	A459	103	97	100	100	1	3	6
TRIUMPH	TR 481	90	101	76	89	1	6	6
DEKALB	DK-35	94	95	118	102	0	2	9
DEKALB	DK-44	93	103	83	93	-1	4	9
NK	KS 711Y	99	--	104	--	-1	5	6
DELANGE	DSA 115C	89	--	--	--	-3	5	6
c MATURITY CHECK	RS 610	84	94	115	98	-6 *	2	9
c MATURITY CHECK	C 305	89	90	95	91	-8 *	1	9
MATURITY CHECK	OK11xTX2741	88	86	115	96	-9 *	2	9
AGRIPRO	AP 2731	--	97	94	--	--	--	--
AGRIPRO	AP 2838	--	--	108	--	--	--	--
ASGROW	A355	99	101	107	102	--	--	--
ASGROW	A581	104	101	66	90	--	--	--
DEKALB	X-758 EXP	114	105	94	105	--	--	--
DELANGE	DSA 144	--	--	59	--	--	--	--
GARST	5440	105	104	120	110	--	--	--

(continued)

TABLE 8. SOUTHEAST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		FRA	CHA	LAB	AVG.	DYA (bu/a) ²	SE ³	N ⁴
GARST	5515	--	--	110	--	--	--	--
GAUCHO CHECK	DK-56(G)	98	101	74	91	--	--	--
GAUCHO CHECK	NC+271(G)	101	98	99	99	--	--	--
GAUCHO CHECK	NC+271(N)	104	95	91	97	--	--	--
GAUCHO CHECK	NK KS 560Y(G)	107	--	116	--	--	--	--
GAUCHO CHECK	NK KS 560Y(N)	98	--	113	--	--	--	--
HOEGEMEYER	6712	98	97	90	95	--	--	--
HOEGEMEYER	6874	--	108	--	--	--	--	--
HYTEST	HTG747	91	--	--	--	--	--	--
HYTEST	HTG760	109	--	--	--	--	--	--
MIDLAND	M-4725	--	97	--	--	--	--	--
MIDLAND	M-4757Y	84	--	--	--	--	--	--
MIDLAND	M-4774	88	--	81	--	--	--	--
MIDLAND	M-4876	88	86	104	93	--	--	--
MIDWEST SEED	256	89	--	--	--	--	--	--
MIDWEST SEED	G 571	82	--	--	--	--	--	--
MYCOGEN	3700	112	108	127	115	--	--	--
NC+	6C69	91	--	104	--	--	--	--
NC+	7B47	117	--	104	--	--	--	--
TERRA	TR2	105	--	75	--	--	--	--
TERRA	TR303	97	--	100	--	--	--	--
TERRA	TR440	--	--	100	--	--	--	--
TRIUMPH	TR 447	100	--	113	--	--	--	--
TRIUMPH	TR 459	97	95	94	96	--	--	--
U.A.P.	UAP-751B	106	100	121	109	--	--	--
U.A.P.	UAP-760C	101	98	96	98	--	--	--
AVERAGES		108	126	54	96	--	--	--
CV(%)		9	6	11	--	--	--	--
LSD(0.05)**		10	7	13	--	--	--	--

¹ FRD = Franklin Co. Test, East Central Exp. Field, Ottawa CHD = Chase Co. Test, ImMasche Res. Center, Strong City

LBD = Labette Co. Test, Southeast Research Extension Center, Parsons

² DY A = Differential Yielding Ability; average difference of hybrid yield compared to average of check hybrids in bushels per acre.

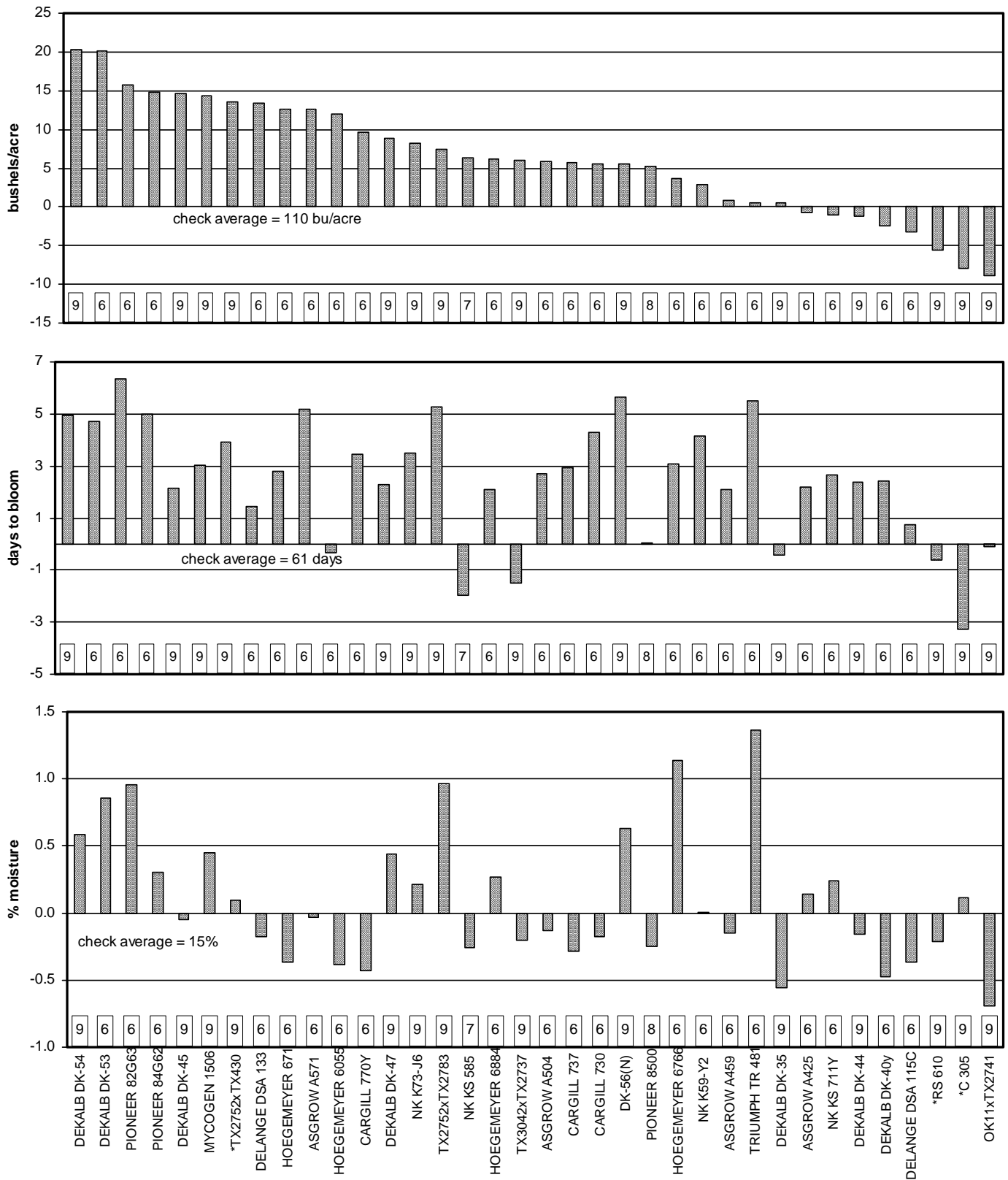
³ SE = Standard Error of DY A; measure of consistency of yield differences.

⁴ N = Number of tests where hybrid was compared with checks; DY A was calculated only for those with at least 5 comparisons.

^c Check hybrid; yield of each hybrid was compared to the average yield of these check hybrids.

* Statistically significantly different from the average of the check hybrids, which = 0 (P < 0.5).

FIGURE 7. SOUTHEAST KANSAS SORGHUM HYBRID PERFORMANCE SUMMARY, 1997-1999.



Bars show differences between hybrid and average of check hybrids*. Values in boxes are numbers of tests where hybrids and checks were compared.

SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SILTY CLAY LOAM SOIL

COUNTY: HARVEY

LOCATION: Harvey County Experiment Field, Hesston

TEST SITE: Smolan silty clay loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 118 N 31 P₂O₅ 53 K₂O

PLANTING DATE: 6/9/99

HARVEST DATE: 10/21/99

COOPERATORS:

Mark Claassen, agronomist; Kevin Duerksen and Lowell Stucky, technicians

TARGET POPULATION: 45,000 plants/acre,
4.6 in. spacing

STAND (% of target): 106

YIELD: Average (bu/a): 89

Range (bu/a): 68 - 112

LSD (bu/a): 8

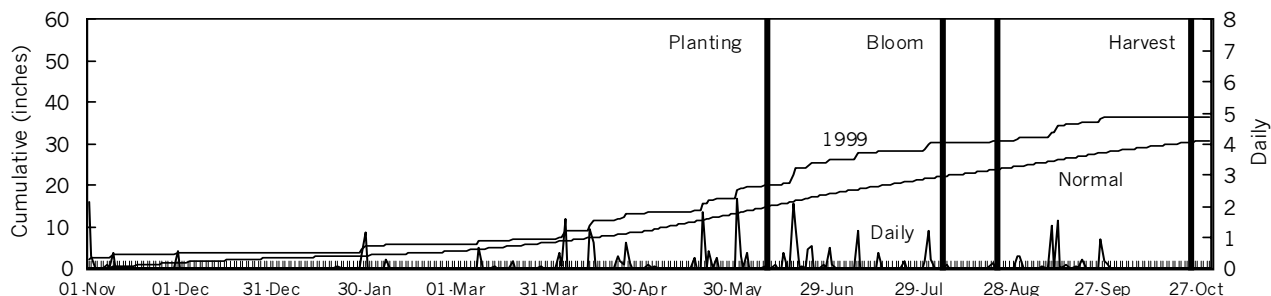
CV (%): 7

BLOOM DATES: 8/5/99 - 8/23/99

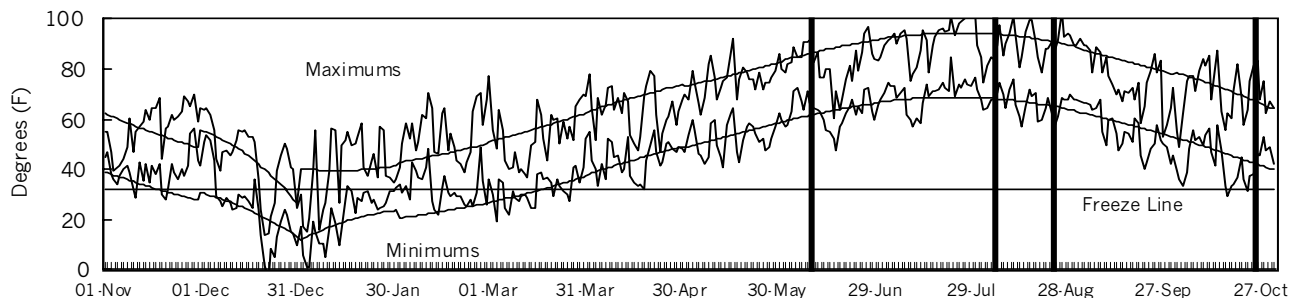
1999 GROWING CONDITIONS

Hard rains 9 days after planting may have affected stands. Temperatures were below normal and rainfall well above average during the spring. Below-average rainfall in July and August coupled with high temperatures caused drought stress. September was unusually wet. October was very dry with excellent harvesting conditions following a killing frost on the 18th. Serious lodging occurred in some plots and appeared to be the result of drought stress. Most lodging occurred in mid-September after heavy rains broke an extended dry period.

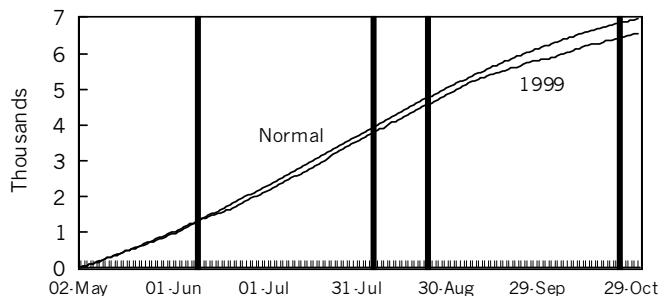
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	6.2	2.6	54	56	0	0
May	5.7	4.5	64	66	917	963
June	7.3	4.7	72	76	1150	1251
July	2.4	3.6	81	81	1471	1460
August	2.8	3.0	78	79	1368	1407
Sep.	5.1	3.7	65	71	935	1098
Oct.	0.0	2.6	57	59	720	780
Season Totals	29.4	24.6	68	70	6561	6959

TABLE 9. HARVEY CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plant Ht. in.	Ldg %	Final Stand per %	Hds per Plant
					AVG.	AVG.												
MATURITY CHECK	C 305	76	37	114	57	76	86	55	84	56	13	57	12	57	47	44	101	1.4
MATURITY CHECK	TX3042xTX2737	81	42	124	61	82	91	62	91	59	13	59	12	59	48	45	108	1.3
NK	KS 585	103	56	149	80	103	117	83	109	59	14	59	12	61	43	0	109	1.5
ASGROW	SENECA	76	57	--	67	--	86	85	--	58	14	60	12	60	44	10	90	1.5
HOEGEMEYER	6055	91	59	--	75	--	103	88	--	59	14	60	12	59	45	16	121	1.1
DEKALB	DK-35	96	61	140	78	99	108	90	102	60	14	61	12	59	46	4	116	1.2
NC+	6B70	96	59	--	78	--	109	87	--	60	14	61	12	60	43	1	120	1.4
NC+	6B50	94	62	--	78	--	106	92	--	59	13	61	12	59	48	7	115	1.2
GAUCHO CHECK	NK KS 560Y(N)	92	--	--	--	--	104	--	--	--	--	62	11	60	40	4	117	1.4
ASGROW	A355	86	--	--	--	--	97	--	--	--	--	62	12	58	46	14	84	1.5
GAUCHO CHECK	NK KS 560Y(G)	95	--	--	--	--	107	--	--	--	--	62	12	59	40	3	108	1.5
GARST	5664	86	--	--	--	--	97	--	--	--	--	63	12	59	44	0	122	1.1
MATURITY CHECK	RS 610	70	22	112	46	68	79	32	82	62	14	63	12	57	45	14	84	1.6
MIDLAND	M-4664	94	49	--	71	--	106	72	--	61	13	63	12	58	44	34	95	1.5
U.A.P.	UAP-751B	91	--	--	--	--	103	--	--	--	--	63	12	59	43	7	95	1.5
CARGILL	647	87	76	125	81	96	98	112	92	63	14	64	12	60	47	5	102	1.4
NC+	7B29	87	59	131	73	92	98	87	96	63	14	64	12	59	44	1	101	1.3
PIONEER	8500	93	60	132	76	95	105	89	96	62	14	64	12	60	49	22	122	1.4
U.A.P.	UAP-740C	72	--	--	--	--	81	--	--	--	--	64	12	59	46	9	93	1.4
MATURITY CHECK	OK11xTX2741	73	42	98	58	71	83	63	72	62	13	65	11	59	45	19	90	1.4
DELANGE	DSA 133	99	60	--	80	--	112	89	--	63	13	65	12	59	48	16	109	1.2
DELANGE	DSA 115C	72	57	132	65	87	81	84	97	62	14	65	12	60	45	11	96	1.2
MIDWEST SEED	G 530	74	--	--	--	--	84	--	--	--	--	65	12	60	46	12	100	1.3
MYCOGEN	444E	95	--	136	--	--	108	--	100	--	--	65	12	59	49	23	108	1.3
MYCOGEN	EXP X9890	85	--	--	--	--	96	--	--	--	--	65	12	60	45	5	109	1.3
PIONEER	8414	83	88	139	86	103	94	131	101	62	14	65	12	58	48	1	114	1.3
U.A.P.	UAP-760C	82	--	--	--	--	92	--	--	--	--	65	12	59	49	1	108	1.3
ASGROW	A459	98	67	--	83	--	111	100	--	63	14	66	12	60	51	18	116	1.1
CARGILL	697	90	65	--	77	--	102	96	--	63	13	66	12	57	47	3	116	1.2
DEKALB	DK-43A	93	53	138	73	94	105	78	101	64	14	66	12	59	45	6	122	1.2
DEKALB	DK-47	96	69	--	82	--	108	102	--	63	14	66	12	60	50	26	110	1.4
GARST	5440	91	--	--	--	--	103	--	--	--	--	66	12	59	49	44	100	1.4
GAUCHO CHECK	NC+271(G)	84	--	--	--	--	95	--	--	--	--	66	12	59	48	3	96	1.4
GAUCHO CHECK	NC+271(N)	86	--	--	--	--	97	--	--	--	--	66	12	59	48	3	114	1.2
HOEGEMEYER	6884	77	72	--	75	--	87	107	--	64	14	66	12	59	47	26	116	1.1
MYCOGEN	3700	75	--	--	--	--	85	--	--	--	--	66	12	59	50	73	115	1.1
AGRIPRO	HY 2660	76	77	141	76	98	85	113	103	64	14	67	12	59	47	22	99	1.3
HOEGEMEYER	6712	87	--	--	--	--	98	--	--	--	--	67	12	59	45	1	113	1.2
HOEGEMEYER	6874	82	71	138	77	97	93	106	101	64	14	67	12	60	47	37	119	1.2
TRIUMPH	TR 462	71	74	139	72	94	80	109	101	64	14	67	12	60	48	42	87	1.5
NK	K59-Y2	68	59	--	63	--	76	87	--	65	13	68	11	57	49	44	89	1.3

(continued)

TABLE 9. HARVEY CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
CARGILL	730	93	81	148	87	107	105	120	109	65	14	68	12	59	46	6	113	1.2
DELANGE	DSA 123Y	90	38	--	64	--	102	56	--	64	14	68	12	58	41	6	98	1.4
GARST	5515	96	--	--	--	--	109	--	--	--	--	68	12	58	50	5	95	1.2
GARST	5429	92	96	167	94	118	104	142	122	64	14	68	12	60	48	3	112	1.1
MIDLAND	M-4774	90	101	--	96	--	102	150	--	65	14	68	12	60	48	1	108	1.2
MIDWEST SEED	G 571	95	--	156	--	--	107	--	114	--	--	68	12	60	48	1	99	1.3
MIDWEST SEED	256	112	90	168	101	124	126	134	123	65	14	68	12	59	54	0	107	1.3
MYCOGEN	3694	107	--	--	--	--	121	--	--	--	--	68	12	60	48	1	120	1.3
NK	KS 711Y	79	64	139	71	94	89	94	102	64	14	68	12	61	41	0	78	2.0
PIONEER	84G62	104	78	--	91	--	117	116	--	65	14	68	12	59	49	13	118	1.2
CARGILL	770Y	95	60	131	78	95	107	89	96	65	13	69	11	58	44	5	104	1.3
ASGROW	A581	94	--	--	--	--	106	--	--	--	--	69	12	58	51	13	103	1.1
CARGILL	627	99	72	151	86	107	112	107	110	65	14	69	12	57	47	0	108	1.3
DEKALB	DK-44	83	74	144	78	100	94	110	105	65	14	69	12	59	46	5	114	1.1
DEKALB	DK-45	86	73	146	79	102	97	108	107	65	14	69	12	59	51	11	103	1.2
MATURITY CHECK	TX2752xTX430	92	69	142	81	101	104	102	104	66	13	69	12	58	44	12	91	1.5
MIDLAND	M-4757Y	102	89	--	96	--	115	132	--	65	14	69	12	60	49	0	116	1.2
MYCOGEN	1506	107	92	163	99	121	121	136	119	65	14	69	12	59	52	0	93	1.4
TRIUMPH	TR 459	89	--	--	--	--	101	--	--	--	--	69	12	59	41	0	91	1.6
VALLEY PREMIUM	V.P. 530	73	--	--	--	--	82	--	--	--	--	69	12	58	52	78	106	1.1
NK	K73-J6	93	83	172	88	116	105	123	126	65	14	69	13	59	49	1	93	1.6
DEKALB	X-758 EXP	101	--	--	--	--	114	--	--	--	--	70	12	59	47	0	127	1.0
MATURITY CHECK	TX2752xTX2783	76	65	118	71	87	86	97	86	66	14	70	12	60	49	41	98	1.3
VALLEY PREMIUM	V.P. 700	74	--	--	--	--	84	--	--	--	--	71	11	57	43	4	118	1.0
MIDLAND	M-4836	78	69	--	74	--	89	102	--	67	14	71	12	59	44	10	92	1.6
VALLEY PREMIUM	V.P. 850	78	--	--	--	--	88	--	--	--	--	71	12	58	49	33	113	1.1
VALLEY PREMIUM	V.P. 900	77	--	--	--	--	88	--	--	--	--	71	12	59	49	31	106	1.1
GAUCHO CHECK	DK-56(G)	102	--	--	--	--	115	--	--	--	--	73	13	60	52	7	114	1.1
TRIUMPH	TR 481	106	102	171	104	126	120	151	125	69	14	74	13	60	49	0	108	1.2
DEKALB	DK-53	104	86	--	95	--	117	128	--	69	15	74	14	60	49	1	107	1.0
GAUCHO CHECK	DK-56(N)	105	84	131	94	107	118	124	96	70	14	75	13	60	50	4	118	1.1
AVERAGES		88	67	137	78	98	88	67	137	63	14	66	12	59	47	13	106	1.3
CV(%)		7	12	6	--	--	7	12	6	--	--	1	3	1	3	59	8	7.9
LSD(0.05)**		8	11	12	--	--	9	16	9	--	--	1	0	1	2	11	11	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: RENO

LOCATION: South Central Kansas Experiment Field, Hutchinson

TEST SITE: Ost silt loam

1998 CROP: Wheat

1997 CROP: Oats

FERTILIZER (lbs/acre): 120 N 40 P₂O₅ 0 K₂O

PLANTING DATE: 5/18/99

HARVEST DATE: 9/24/99

COOPERATORS:

William Heer, agronomist; Jim Dirks, technician

TARGET POPULATION: 40,000 plants/acre,

5.2 in. spacing

STAND (% of target): 98

YIELD: Average (bu/a): 123

Range (bu/a): 103 - 140

LSD (bu/a): 10

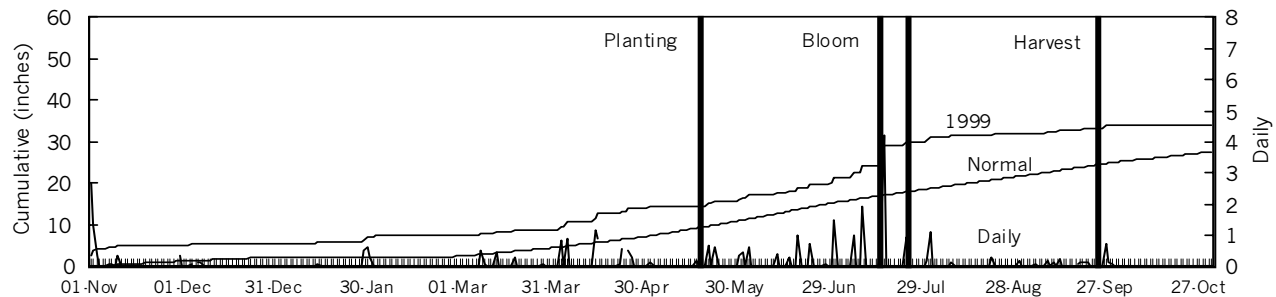
CV (%): 7

BLOOM DATES: 7/15/99 - 7/24/99

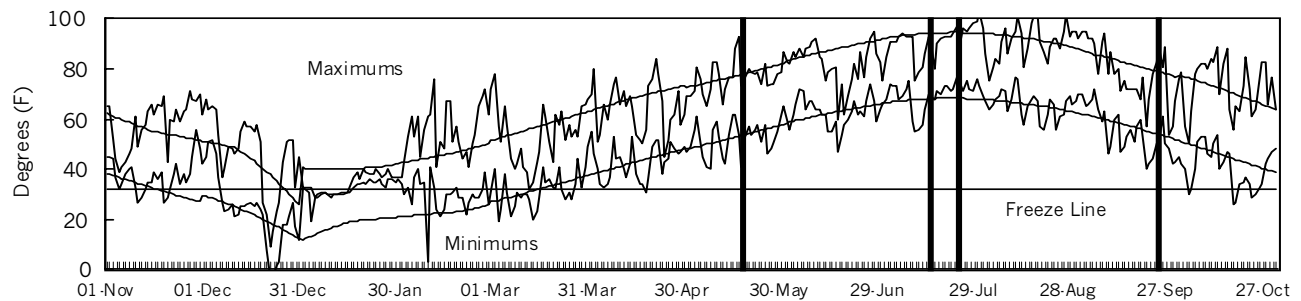
1999 GROWING CONDITIONS

Spring conditions were ideal for sorghum growth. Conditions turned hot and dry later in the season. Some greenbugs were observed but appeared to cause little damage. Check hybrids with seed-applied insecticide had no yield advantage.

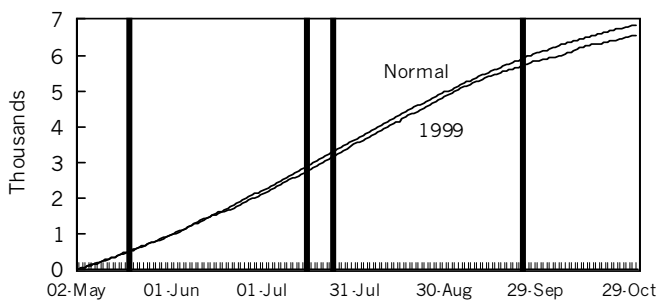
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	5.4	2.6	54	56	0	0
May	2.0	3.9	65	65	925	940
June	3.8	4.3	72	75	1145	1234
July	10.2	3.4	80	81	1431	1454
August	1.8	3.1	79	79	1380	1385
Sep.	2.2	3.3	67	70	977	1072
Oct.	0.0	2.5	57	58	713	748
Season Totals	25.4	23.1	68	69	6569	6833

TABLE 10. RENO CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plant Ht. in.	Final Ldg %	Hds Stand per %	Hds per Plnt
MATURITY CHECK	C 305	115	53	100	84	89	94	57	78	58	13	58	12	58	51	--	97	1.6
MATURITY CHECK	TX3042xTX2737	120	76	123	98	106	97	82	96	60	14	59	13	59	58	--	108	1.5
NK	KS 585	123	116	135	120	125	100	125	105	61	13	60	13	61	51	--	106	1.6
ASGROW	A355	125	--	--	--	--	102	--	--	--	--	61	13	60	51	--	83	1.8
DEKALB	DK-35	119	101	126	110	115	96	109	98	61	13	61	13	60	50	--	110	1.4
HOEGEMEYER	6055	129	82	--	106	--	105	89	--	61	13	61	13	60	50	--	109	1.3
MATURITY CHECK	OK11xTX2741	109	76	120	93	102	89	82	94	61	14	61	13	60	47	--	88	1.3
NC+	6B50	130	89	--	109	--	106	96	--	61	13	61	13	60	50	--	112	1.3
U.A.P.	UAP-751B	116	--	--	--	--	95	--	--	--	--	61	13	60	50	--	81	1.7
GARST	5515	107	--	--	--	--	87	--	--	--	--	61	14	60	51	--	95	1.2
MATURITY CHECK	RS 610	109	75	110	92	98	89	81	86	61	13	62	12	59	56	--	97	1.5
ASGROW	SENECA	105	88	--	96	--	86	94	--	61	13	62	13	61	46	--	98	1.5
DELANGE	DSA 115C	108	86	117	97	104	88	93	91	62	13	62	13	61	46	--	106	1.2
MIDLAND	M-4664	125	93	--	109	--	101	100	--	61	13	62	13	59	48	--	89	1.8
MIDWEST SEED	G 530	104	--	--	--	--	85	--	--	--	--	62	13	61	48	--	88	1.3
NC+	6B70	120	101	--	110	--	97	109	--	63	13	62	13	60	54	--	115	1.4
U.A.P.	UAP-740C	103	--	--	--	--	84	--	--	--	--	62	13	60	48	--	76	1.4
DEKALB	DK-47	137	96	--	117	--	111	104	--	64	14	62	14	61	53	--	103	1.4
GARST	5616	107	101	--	104	--	87	109	--	63	14	62	14	60	47	--	96	1.2
ASGROW	A459	124	105	--	114	--	101	113	--	63	13	63	13	61	57	--	105	1.2
DEKALB	DK-44	117	104	109	111	110	96	112	85	63	13	63	13	60	52	--	99	1.3
GAUCHO CHECK	NC+271(N)	118	--	--	--	--	96	--	--	--	--	63	13	60	56	--	90	1.4
HOEGEMEYER	6712	114	--	--	--	--	93	--	--	--	--	63	13	60	50	--	105	1.2
PIONEER	8414	130	--	140	--	--	106	--	109	--	--	63	13	61	56	--	96	1.7
PIONEER	8500	128	107	134	118	123	104	115	104	62	14	63	13	61	52	--	88	1.8
TRIUMPH	TR 462	131	95	143	113	123	107	102	111	63	14	63	13	61	55	--	97	1.6
CARGILL	647	126	103	137	114	122	103	111	106	62	14	63	14	61	54	--	110	1.3
CARGILL	627	112	107	129	109	116	91	115	101	64	14	63	14	60	50	--	106	1.3
DEKALB	DK-43A	122	89	128	106	113	100	96	99	64	14	63	14	60	50	--	111	1.2
DEKALB	DK-45	120	84	142	102	115	98	90	110	63	15	63	14	60	57	--	106	1.1
DELANGE	DSA 133	136	88	--	112	--	111	95	--	63	14	63	14	60	56	--	108	1.5
GARST	5440	129	--	--	--	--	105	--	--	--	--	63	14	61	54	--	102	1.4
MYCOGEN	3700	135	--	--	--	--	110	--	--	--	--	63	14	61	57	--	106	1.4
NK	KS 711Y	109	100	100	105	103	89	107	78	64	14	63	14	62	46	--	81	1.9
U.A.P.	UAP-760C	120	--	--	--	--	98	--	--	--	--	63	14	60	54	--	103	1.1
AGRIPRO	AP 2838	113	97	--	105	--	92	105	--	64	15	64	13	60	54	--	88	1.3
CARGILL	770Y	122	88	124	105	111	99	95	97	64	14	64	13	59	55	--	105	1.5
CARGILL	730	123	100	138	112	121	100	108	107	65	14	64	13	60	53	--	111	1.3
MIDLAND	M-4836	140	74	--	107	--	114	80	--	66	13	64	13	61	52	--	95	1.8
NC+	7B29	125	94	120	110	113	102	101	93	64	13	64	13	61	49	--	100	1.4
NK	K59-Y2	112	85	--	99	--	91	92	--	66	13	64	13	59	56	--	96	1.3

(continued)

TABLE 10. RENO CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999				Final Hds Stand per Plnt		
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.		Ldg %	
TAN PLANT	ATX631xR9019	129	79	--	104	--	105	85	--	65	14	64	13	59	63	--	87	1.5
WARNER	W-965-E	133	55	--	94	--	108	59	--	66	13	64	13	60	53	--	94	1.8
CARGILL	697	121	93	--	107	--	99	101	--	64	14	64	14	60	50	--	111	1.2
GAUCHO CHECK	DK-56(G)	125	--	--	--	--	102	--	--	--	--	64	14	61	57	--	105	1.2
GAUCHO CHECK	NC+271(G)	115	--	--	--	--	93	--	--	--	--	64	14	60	57	--	97	1.4
GAUCHO CHECK	DK-56(N)	128	86	128	107	114	104	92	99	67	15	64	14	61	56	--	99	1.2
HOEGEMEYER	6884	120	93	--	106	--	97	100	--	64	14	64	14	61	52	--	99	1.3
HOEGEMEYER	6874	137	91	144	114	124	112	98	112	65	14	64	14	61	56	--	105	1.5
MATURITY CHECK	TX2752xTX2783	138	72	120	105	110	112	78	93	65	14	64	14	61	58	--	100	1.4
MIDWEST SEED	256	129	128	141	129	133	105	138	110	64	14	64	14	60	65	--	91	1.5
MYCOGEN	444E	134	--	135	--	--	109	--	105	--	--	64	14	60	56	--	91	1.7
MYCOGEN	3694	126	--	--	--	--	102	--	--	--	--	64	14	60	56	--	105	1.6
MYCOGEN	EXP X9890	119	--	--	--	--	97	--	--	--	--	64	14	61	53	--	101	1.3
NK	K73-J6	118	113	145	116	126	96	122	113	65	14	64	14	59	57	--	95	1.6
VALLEY PREMIUM	V.P. 530	132	--	--	--	--	108	--	--	--	--	64	14	61	63	--	104	1.4
VALLEY PREMIUM	V.P. 700	111	--	--	--	--	90	--	--	--	--	64	14	60	50	--	105	1.1
WARNER	W-625-Y	120	130	--	125	--	98	140	--	64	14	64	14	60	57	--	96	1.4
WARNER	W-818-E	132	--	--	--	--	108	--	--	--	--	64	14	61	62	--	102	1.2
GARST	5429	116	123	--	120	--	95	132	--	63	14	64	15	60	54	--	101	1.3
MIDLAND	M-4774	118	115	--	117	--	96	123	--	64	15	64	15	60	55	--	89	1.2
MIDWEST SEED	G 571	117	--	136	--	--	95	--	106	--	--	64	15	60	53	--	88	1.3
MATURITY CHECK	TX2752xTX430	134	82	132	108	116	109	88	103	65	14	65	14	60	58	--	102	1.5
MIDLAND	M-4757Y	119	126	--	123	--	97	136	--	65	14	65	14	60	57	--	93	1.5
MYCOGEN	1506	126	132	143	129	134	103	143	112	64	14	65	14	60	63	--	94	1.3
PIONEER	84G62	135	105	--	120	--	110	113	--	66	14	65	14	60	55	--	90	1.8
TRIUMPH	TR 481	134	134	153	134	140	109	144	119	67	14	65	14	61	58	--	97	1.2
VALLEY PREMIUM	V.P. 850	131	--	--	--	--	107	--	--	--	--	65	14	61	58	--	103	1.2
VALLEY PREMIUM	V.P. 900	132	--	--	--	--	107	--	--	--	--	65	14	61	59	--	101	1.1
TAN PLANT	ATX635xTX436	131	71	--	101	--	107	77	--	68	14	66	13	62	68	--	79	1.8
DEKALB	DK-53	131	108	--	120	--	107	117	--	66	14	66	14	61	56	--	107	1.1
TAN PLANT	ATX631xTX436	117	65	--	91	--	95	70	--	67	14	66	14	60	60	--	75	1.8
DEKALB	X-758 EXP	129	--	--	--	--	105	--	--	--	--	66	15	60	52	--	105	1.2
ASGROW	A581	137	--	--	--	--	111	--	--	--	--	67	14	59	56	--	105	1.2
AVERAGES		123	93	129	108	115	123	93	129	64	14	63	14	60	54	--	98	1.4
CV(%)		7	17	6	--	--	7	17	6	--	--	1	3	0	3	--	6	10.3
LSD(0.05)**		9	19	9	--	--	8	20	7	--	--	1	1	0	2	--	7	0.2

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SANDY LOAM SOIL, FALLOW

COUNTY: STAFFORD

LOCATION: Sandyland Experiment Field, St. John

TEST SITE: Naron loamy fine sand

1998 CROP: Wheat

1997 CROP: Fallow

FERTILIZER (lbs/acre): 143 N 46 P₂O₅ 0 K₂O

PLANTING DATE: 6/3/99

HARVEST DATE: 11/8/99

COOPERATORS:

Victor Martin, agronomist; Ron Cunningham and Jeff Scott, technicians

TARGET POPULATION: 35,000 plants/acre,
6.0 in. spacing

STAND (% of target): 108

YIELD: Average (bu/a): 73

Range (bu/a): 44 - 95

LSD (bu/a): 14

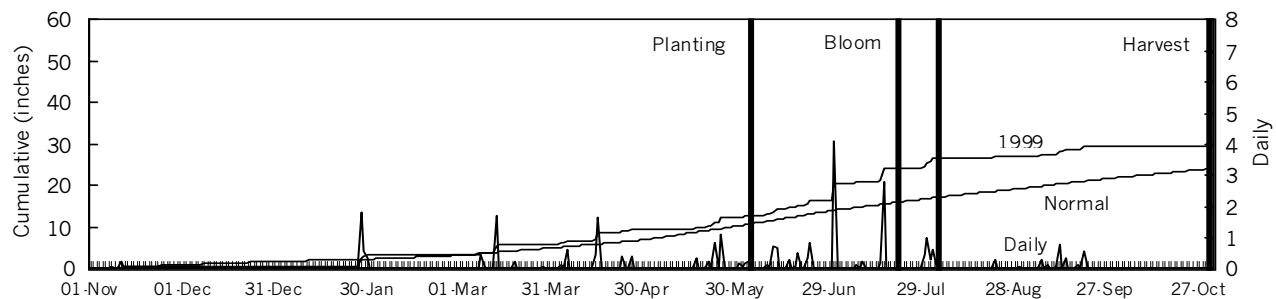
CV (%): 16

BLOOM DATES: 7/21/99 - 8/3/99

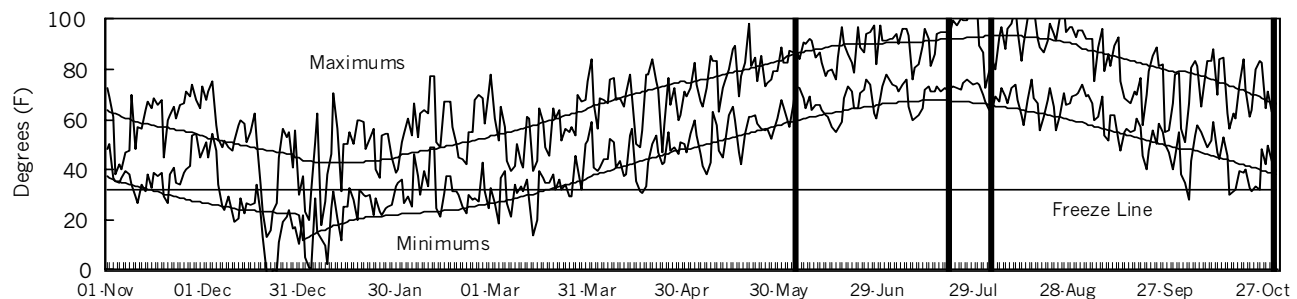
1999 GROWING CONDITIONS

Difficult weather conditions contributed to yield variability. Cool, wet conditions delayed planting and early growth. Hot, dry conditions in August caused significant stress. Favorable temperatures and precipitation in September enabled the test to perform better than anticipated. Check hybrids with seed-applied insecticide did not have significantly higher yields.

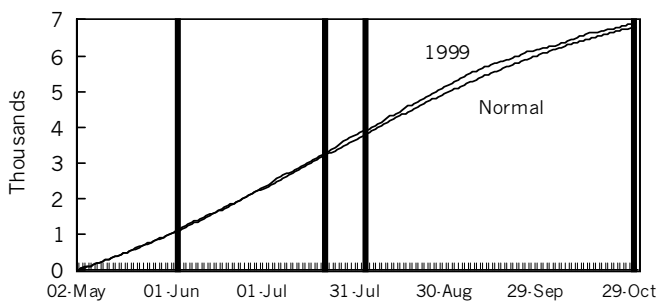
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	3.7	2.0	57	57	0	0
May	2.7	3.4	67	66	984	971
June	4.3	3.7	77	76	1276	1252
July	9.0	2.9	83	79	1505	1407
August	1.4	2.5	80	78	1428	1356
Sep.	2.4	2.5	67	69	996	1044
Oct.	0.0	2.2	58	59	734	769
Season Totals	23.4	19.1	70	69	6923	6800

TABLE 11. STAFFORD CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
DEKALB	DK-35	81	39	117	60	79	112	123	98	55	13	48	11	58	42	5	121	--
MATURITY CHECK	TX3042xTX2737	75	43	115	59	78	103	135	97	54	14	48	12	58	44	8	117	--
MATURITY CHECK	C 305	44	13	102	28	53	60	40	85	54	13	48	12	57	39	15	96	--
MIDLAND	M-4664	73	35	--	54	--	101	111	--	55	14	48	12	57	41	21	105	--
NK	KS 585	82	36	118	59	78	113	112	99	54	13	48	12	61	40	4	104	--
MATURITY CHECK	RS 610	62	20	104	41	62	86	64	87	56	13	49	12	58	40	7	107	--
ASGROW	SENECA	61	39	--	50	--	85	124	--	54	13	50	12	60	37	2	93	--
GARST	5515	67	--	--	--	--	92	--	--	--	--	50	12	58	41	9	96	--
CARGILL	647	81	28	123	54	77	111	88	103	57	13	51	12	59	42	5	117	--
PIONEER	87G57	72	--	111	--	--	99	--	94	--	--	51	12	59	40	5	121	--
DEKALB	DK-43A	79	32	124	55	78	108	102	104	58	14	52	12	59	41	3	121	--
DELANGE	DSA 115C	76	25	115	51	72	105	79	97	58	14	52	12	58	41	4	129	--
MATURITY CHECK	OK11xTX2741	66	28	104	47	66	91	89	88	56	13	52	12	59	39	4	95	--
NK	KS 711Y	58	23	116	41	66	81	72	97	59	13	52	12	57	37	9	98	--
PIONEER	8505	53	30	--	41	--	73	94	--	57	13	52	12	58	40	3	108	--
U.A.P.	UAP-751B	69	--	--	--	--	95	--	--	--	--	52	12	59	43	9	98	--
HOEGEMEYER	6055	87	42	--	64	--	120	132	--	56	12	53	11	57	42	4	116	--
U.A.P.	UAP-740C	55	--	--	--	--	76	--	--	--	--	53	11	59	38	6	86	--
CARGILL	627	85	42	129	64	86	118	134	109	60	14	53	12	59	40	3	117	--
DEKALB	DK-47	95	35	--	65	--	131	112	--	61	13	53	12	59	42	2	116	--
HOEGEMEYER	6712	70	--	--	--	--	96	--	--	--	--	53	12	58	44	4	123	--
NC+	6B70	60	34	--	47	--	83	106	--	59	13	53	12	59	40	2	130	--
ASGROW	A355	62	--	--	--	--	86	--	--	--	--	54	12	58	40	3	83	--
DEKALB	DK-45	78	37	118	58	78	108	118	99	58	14	54	12	58	44	6	113	--
DELANGE	DSA 133	80	36	--	58	--	110	115	--	58	13	54	12	57	39	13	104	--
GAUCHO CHECK	NC+271(N)	67	--	--	--	--	93	--	--	--	--	54	12	59	44	7	105	--
GAUCHO CHECK	NC+271(G)	75	--	--	--	--	103	--	--	--	--	54	12	58	44	5	114	--
HOEGEMEYER	6874	60	33	128	46	74	83	103	108	58	14	54	12	59	42	10	114	--
MYCOGEN	EXP X9890	87	--	--	--	--	120	--	--	--	--	54	12	59	43	6	110	--
U.A.P.	UAP-760C	84	--	--	--	--	115	--	--	--	--	54	12	59	46	5	124	--
NC+	6B50	54	49	--	52	--	75	154	--	58	13	55	11	46	39	4	113	--
AGRIPRO	AP 2731	71	--	--	--	--	98	--	--	--	--	55	12	60	48	2	100	--
CARGILL	697	84	25	--	54	--	115	78	--	60	13	55	12	58	43	6	125	--
MYCOGEN	444E	93	42	124	67	86	128	133	104	58	13	55	12	58	42	6	101	--
ASGROW	A459	72	38	--	55	--	100	120	--	60	15	56	12	59	44	4	116	--
GARST	5429	86	47	--	66	--	118	149	--	60	14	56	12	60	44	2	111	--
MYCOGEN	3694	88	--	--	--	--	121	--	--	--	--	56	12	58	43	2	125	--
MYCOGEN	1506	87	40	126	63	84	120	125	106	62	13	56	12	59	44	1	96	--
NK	K59-Y2	66	27	--	47	--	91	86	--	62	12	56	12	57	44	5	99	--
TRIUMPH	TR 462	75	28	--	52	--	104	88	--	58	13	56	12	60	41	7	102	--
CARGILL	770Y	66	23	124	45	71	91	73	104	61	13	57	12	58	42	1	106	--

(continued)

TABLE 11. STAFFORD CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
DEKALB	DK-44	75	43	123	59	80	103	135	104	62	13	57	12	59	40	3	119	--
DELANGE	DSA 123Y	70	31	--	50	--	97	97	--	62	13	57	12	59	37	2	89	--
GAUCHO CHECK	DK-56(G)	79	--	--	--	--	109	--	--	--	--	57	12	59	45	4	114	--
NC+	7B29	58	27	--	43	--	81	85	--	60	14	57	12	58	40	2	98	--
AGRIPRO	AP 2838	58	--	--	--	--	81	--	--	--	--	58	12	59	41	4	86	--
ASGROW	A581	86	--	--	--	--	119	--	--	--	--	58	12	58	48	8	116	--
CARGILL	730	79	26	129	52	78	109	83	109	62	13	58	12	59	44	5	117	--
DEKALB	DK-53	78	36	--	57	--	108	114	--	63	14	58	12	59	49	3	104	--
MIDLAND	M-4774	73	39	--	56	--	101	122	--	62	14	58	12	60	42	2	100	--
MYCOGEN	3700	64	--	--	--	--	88	--	--	--	--	58	12	59	42	5	104	--
GAUCHO CHECK	DK-56(N)	67	29	134	48	77	92	93	113	66	13	59	12	59	43	5	108	--
HOEGEMEYER	6884	61	30	--	45	--	84	96	--	63	13	59	12	58	41	6	94	--
MATURITY CHECK	TX2752xTX430	94	28	131	61	84	130	89	110	62	13	59	12	58	45	4	100	--
PIONEER	84G62	74	51	--	62	--	101	161	--	61	13	59	12	59	43	2	116	--
TRIUMPH	TR 481	73	24	--	48	--	100	77	--	66	14	59	12	59	42	0	98	--
DEKALB	X-758 EXP	76	--	--	--	--	105	--	--	--	--	60	12	58	44	1	109	--
MATURITY CHECK	TX2752xTX2783	60	32	114	46	69	83	101	96	67	13	60	12	60	48	9	110	--
MIDLAND	M-4757Y	67	34	--	51	--	92	108	--	64	14	60	12	60	45	1	111	--
AVERAGES		72	32	119	52	74	72	32	119	59	14	54	12	58	42	5	108	--
CV(%)		16	31	10	--	--	16	31	10	--	--	3	4	6	8	114	7	--
LSD(0.05)**		14	11	14	--	--	19	36	12	--	--	2	1	4	4	7	9	--

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

TABLE 12. SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		HVD	RND	STD	AVG.	DYA (bu/a) ²	SE ³	N ⁴
TRIUMPH	TR 481	120	109	100	110	33 *	8	8
MIDWEST SEED	256	126	105	--	--	32 *	6	8
MYCOGEN	1506	121	103	120	115	30 *	6	9
GARST	5429	104	95	118	105	29 *	8	7
NK	K73-J6	105	96	--	--	29 *	8	6
PIONEER	84G62	117	110	101	110	25 *	5	6
DEKALB	DK-53	117	107	108	111	24 *	6	6
MIDLAND	M-4757Y	115	97	92	102	23	10	6
MIDLAND	M-4774	102	96	101	100	23	10	6
DEKALB	DK-47	108	111	131	117	22 *	2	6
CARGILL	627	112	91	118	107	20 *	4	9
CARGILL	730	105	100	109	105	19 *	4	9
NK	KS 585	117	100	113	110	19 *	4	9
ASGROW	A459	111	101	100	104	18 *	5	6
MYCOGEN	444E	108	109	128	115	18 *	2	7
PIONEER	8500	105	104	--	--	18 *	4	6
PIONEER	8505	--	--	73	--	18	11	5
DELANGE	DSA 133	112	111	110	111	17 *	1	6
c MATURITY CHECK	TX2752xTX430	104	109	130	115	17 *	2	9
PIONEER	8414	94	106	--	--	17 *	6	7
GAUCHO CHECK	DK-56(N)	118	104	92	105	16 *	4	9
AGRIPRO	HY 2660	85	--	--	--	15 *	6	7
CARGILL	647	98	103	111	104	15 *	4	9
DEKALB	DK-45	97	98	108	101	15 *	3	9
HOEGEMEYER	6055	103	105	120	109	15 *	2	6
HOEGEMEYER	6874	93	112	83	96	15 *	4	9
TRIUMPH	TR 462	80	106	104	97	15 *	5	8
DEKALB	DK-35	108	96	112	105	14 *	3	9
DEKALB	DK-44	94	96	103	97	14 *	5	9
MIDWEST SEED	G 571	107	95	--	--	14 *	5	6
CARGILL	697	102	99	115	105	13 *	4	6
NC+	6B50	106	106	75	95	13	6	6
DEKALB	DK-43A	105	100	108	104	12 *	2	9
MIDLAND	M-4664	106	101	101	103	12 *	3	6
NC+	6B70	109	97	83	96	12	5	6
MIDLAND	M-4836	89	114	--	--	11	5	5
CARGILL	770Y	107	99	91	99	10 *	2	9
AGRIPRO	AP 2838	--	92	81	--	9	8	5
HOEGEMEYER	6884	87	97	84	89	9	6	6
DELANGE	DSA 123Y	102	--	97	--	8	4	5
NC+	7B29	98	102	81	93	8 *	3	8
MATURITY CHECK	TX3042xTX2737	91	97	103	97	6	2	9
ASGROW	SENECA	86	86	85	86	5	6	6
DELANGE	DSA 115C	81	88	105	92	5	3	9
MATURITY CHECK	TX2752xTX2783	86	112	83	94	5	3	9
NK	KS 711Y	89	89	81	86	4	5	9
NK	K59-Y2	76	91	91	86	3	5	6
MATURITY CHECK	OK11xTX2741	83	89	91	87	-3	3	9

(continued)

TABLE 12. SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹				1997-1999		
		HVD	RND	STD	AVG.	DYA (bu/a) ²	SE ³	N ⁴
c	MATURITY CHECK RS 610	79	89	86	85	-7 *	2	9
c	MATURITY CHECK C 305	86	94	60	80	-10 *	2	9
	AGRIPRO AP 2731	--	--	98	--	--	--	--
	ASGROW A355	97	102	86	95	--	--	--
	ASGROW A581	106	111	119	112	--	--	--
	DEKALB X-758 EXP	114	105	105	108	--	--	--
	GARST 5440	103	105	--	--	--	--	--
	GARST 5515	109	87	92	96	--	--	--
	GARST 5616	--	87	--	--	--	--	--
	GARST 5664	97	--	--	--	--	--	--
	GAUCHO CHECK DK-56(G)	115	102	109	108	--	--	--
	GAUCHO CHECK NC+271(G)	95	93	103	97	--	--	--
	GAUCHO CHECK NC+271(N)	97	96	93	95	--	--	--
	GAUCHO CHECK NK KS 560Y(G)	107	--	--	--	--	--	--
	GAUCHO CHECK NK KS 560Y(N)	104	--	--	--	--	--	--
	HOEGEMEYER 6712	98	93	96	96	--	--	--
	MIDWEST SEED G 530	84	85	--	--	--	--	--
	MYCOGEN 3694	121	102	121	115	--	--	--
	MYCOGEN 3700	85	110	88	94	--	--	--
	MYCOGEN EXP X9890	96	97	120	104	--	--	--
	PIONEER 87G57	--	--	99	--	--	--	--
	TAN PLANT ATX631xR9019	--	105	--	--	--	--	--
	TAN PLANT ATX631xTX436	--	95	--	--	--	--	--
	TAN PLANT ATX635xTX436	--	107	--	--	--	--	--
	TRIUMPH TR 459	101	--	--	--	--	--	--
	U.A.P. UAP-740C	81	84	76	80	--	--	--
	U.A.P. UAP-751B	103	95	95	98	--	--	--
	U.A.P. UAP-760C	92	98	115	102	--	--	--
	VALLEY PREMIUM V.P. 530	82	108	--	--	--	--	--
	VALLEY PREMIUM V.P. 700	84	90	--	--	--	--	--
	VALLEY PREMIUM V.P. 850	88	107	--	--	--	--	--
	VALLEY PREMIUM V.P. 900	88	107	--	--	--	--	--
	WARNER W-625-Y	--	98	--	--	--	--	--
	WARNER W-818-E	--	108	--	--	--	--	--
	WARNER W-965-E	--	108	--	--	--	--	--
	AVERAGES	88	123	72	95	--	--	--
	CV(%)	7	7	16	--	--	--	--
	LSD(0.05)**	9	8	19	--	--	--	--

¹ HVD = Harvey Co. Test, Harvey Co. Exp. Field, Hesston
 STD = Stafford Co. Test, Sandyland Exp. Field, St. John

RND = Reno Co. Test, South Central Exp. Field, Hutchinson

² DY A = Differential Yielding Ability; average difference of hybrid yield compared to average of check hybrids in bushels per acre.

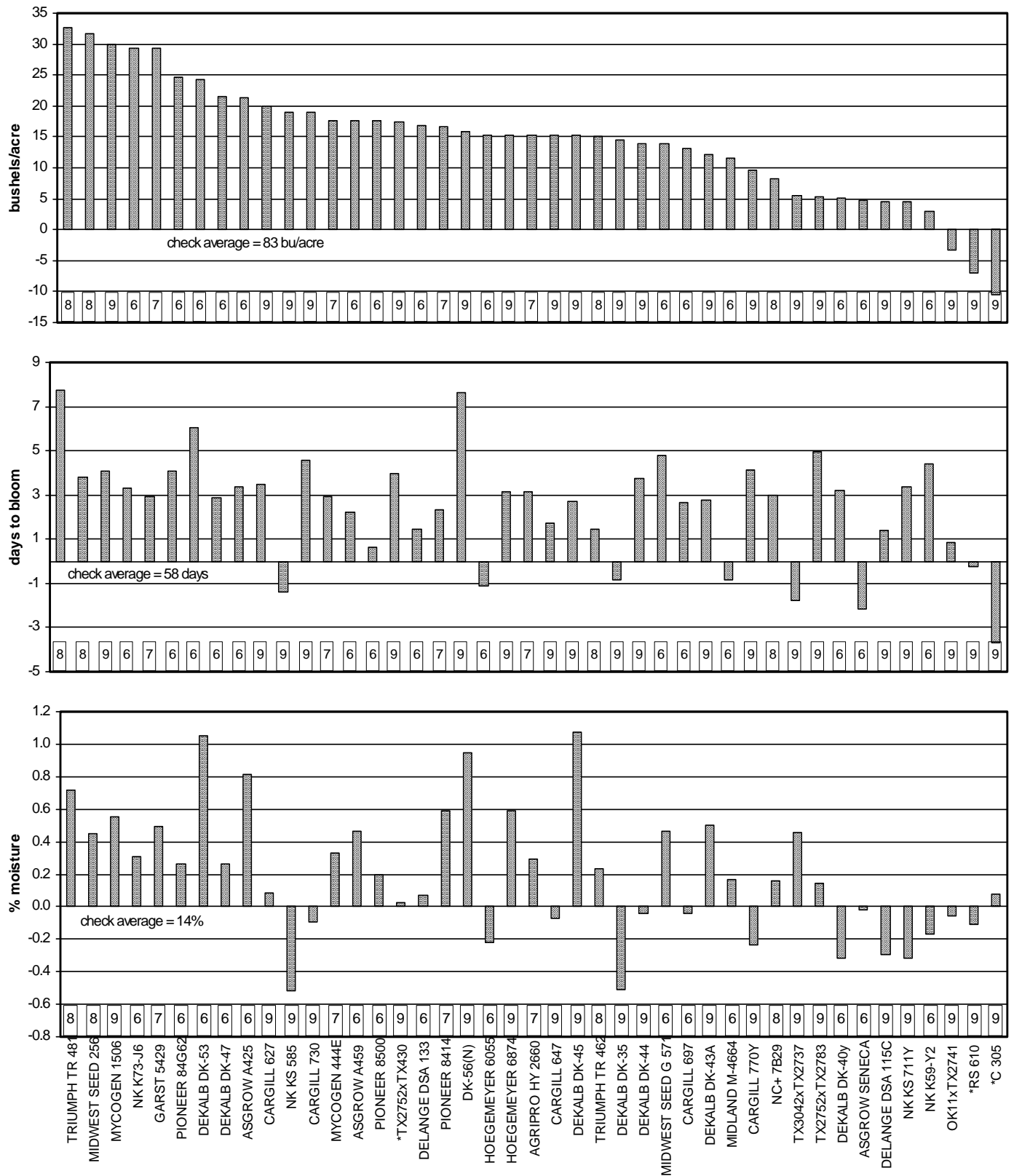
³ SE = Standard Error of DY A; measure of consistency of yield differences.

⁴ N = Number of tests where hybrid was compared with checks; DY A was calculated only for those with at least 5 comparisons.

^c Check hybrid; yield of each hybrid was compared to the average yield of these check hybrids.

* Statistically significantly different from the average of the check hybrids, which = 0 (P < 0.5).

FIGURE 8. SOUTH CENTRAL KANSAS SORGHUM HYBRID PERFORMANCE SUMMARY, 1997-1999.



Bars show differences between hybrid and average of check hybrids*.
 Values in boxes are numbers of tests where hybrids and checks were compared.

NORTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL

COUNTY: ELLIS

LOCATION: Agricultural Research Center, Hays

TEST SITE: Harney silt loam

1998 CROP: Fallow

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 60 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 6/1/99

HARVEST DATE: 10/13/99

COOPERATORS:

Kenneth Kofoid, agronomist

TARGET POPULATION: 35,000 plants/acre,

6.0 in. spacing

STAND (% of target): 93

YIELD: Average (bu/a): 137

Range (bu/a): 109 - 157

LSD (bu/a): 11

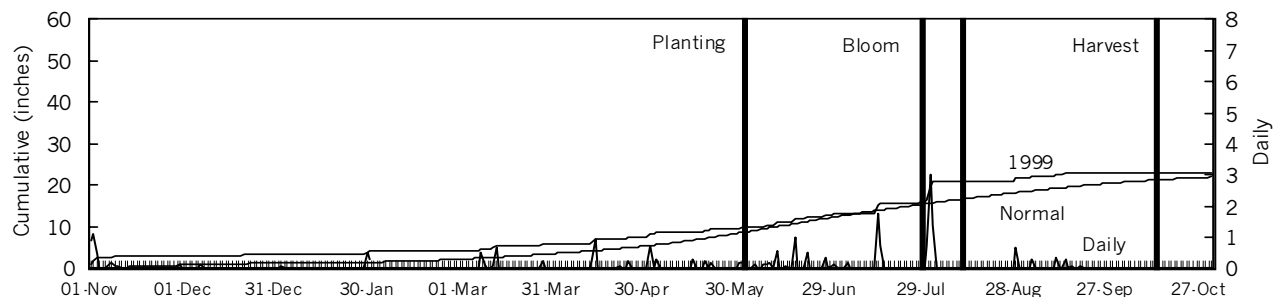
CV (%): 6

BLOOM DATES: 7/29/99 - 8/11/99

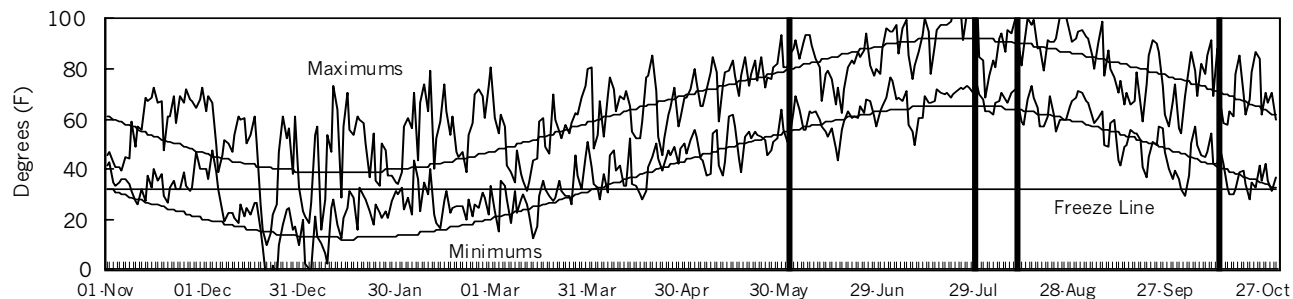
1999 GROWING CONDITIONS

Stands were somewhat variable but acceptable. Hot, dry spells in the early and later parts of the growing season were alleviated by heavy rains that refilled the soil profile. No insect problems were noted. Yields of check hybrids with soil-applied insecticide were not significantly higher.

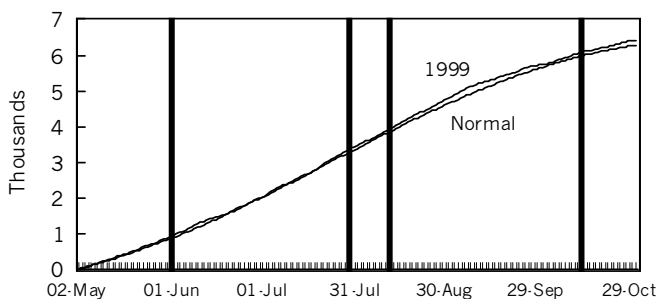
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	1.6	1.9	52	51	0	0
May	2.1	3.2	63	62	890	842
June	3.4	3.8	71	72	1097	1141
July	3.6	3.3	81	78	1464	1366
August	5.2	2.8	78	76	1359	1301
Sep.	1.2	2.2	65	67	931	995
Oct.	0.0	1.4	56	55	676	638
Season Totals	17.1	18.5	67	66	6417	6281

TABLE 13. ELLIS CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
MATURITY CHECK	C 305	133	121	131	127	128	97	81	92	61	13	58	12	58	45	--	81	1.7
PIONEER	87G57	127	--	--	--	--	93	--	--	--	--	59	12	60	39	--	97	1.6
MATURITY CHECK	TX3042xTX2737	132	154	138	143	141	96	104	97	64	13	60	12	60	47	--	93	1.6
NC+	5B74E	132	133	140	133	135	96	90	99	63	13	60	12	59	38	--	98	1.5
DEKALB	DK-35	149	145	141	147	145	109	97	100	64	13	61	12	59	40	--	93	1.6
ASGROW	A201	114	--	--	--	--	83	--	--	--	--	62	12	57	36	--	86	1.7
GOLDEN WORLD	GW 5972	134	--	--	--	--	98	--	--	--	--	62	12	60	43	--	92	1.5
MATURITY CHECK	RS 610	110	121	122	116	118	80	81	86	64	13	62	12	58	43	--	100	1.3
U.A.P.	UAP-731B	122	--	--	--	--	89	--	--	--	--	62	12	58	39	--	94	1.2
GARST	5616	128	153	--	141	--	93	103	--	68	14	62	13	58	42	--	98	1.4
U.A.P.	UAP-730B	133	--	--	--	--	97	--	--	--	--	62	13	61	41	--	89	1.6
ASGROW	A355	137	--	--	--	--	100	--	--	--	--	63	12	58	44	--	87	1.4
ASGROW	SENECA	124	132	--	128	--	90	89	--	65	13	63	12	61	39	--	96	1.6
GARST	5631Y	134	160	142	147	145	98	108	100	67	13	63	12	61	40	--	87	1.5
HYTEST	HTG660	142	--	--	--	--	103	--	--	--	--	63	12	59	44	--	87	1.8
HYTEST	HTG629	136	--	--	--	--	99	--	--	--	--	63	12	61	41	--	97	1.5
MIDWEST SEED	G 530	128	--	--	--	--	93	--	--	--	--	63	12	61	41	--	91	1.3
MYCOGEN	M3838	139	146	141	143	142	102	99	100	68	13	63	12	60	42	--	92	1.4
NC+	6B50	137	157	149	147	148	100	106	106	65	13	63	12	58	45	--	92	1.4
CARGILL	647	141	--	--	--	--	103	--	--	--	--	63	13	60	46	--	100	1.5
GARST	5515	137	--	--	--	--	100	--	--	--	--	63	13	58	46	--	92	1.5
NK	KS 585	140	148	132	144	140	102	100	93	67	13	63	13	61	43	--	95	1.7
PIONEER	8505	138	144	127	141	136	101	97	90	65	13	63	13	60	43	--	98	1.4
U.A.P.	UAP-732B	119	--	--	--	--	87	--	--	--	--	63	13	60	45	--	90	1.4
MIDLAND	XM-98105	148	--	--	--	--	108	--	--	--	--	64	12	57	42	--	93	1.5
NC+	Y363	132	144	144	138	140	97	97	102	67	13	64	12	60	47	--	96	1.6
NC+	6R30	129	--	--	--	--	94	--	--	--	--	64	12	56	40	--	90	1.6
CARGILL	737	152	160	148	156	153	111	108	104	67	13	65	12	58	41	--	91	1.6
DEKALB	DK-43A	132	166	160	149	152	96	111	113	69	13	65	12	59	43	--	96	1.4
GARST	5664	116	--	--	--	--	85	--	--	--	--	65	12	58	43	--	96	1.3
MATURITY CHECK	OK11xTX2741	127	132	144	129	134	92	89	102	67	13	65	12	60	43	--	92	1.4
CARGILL	627	142	150	--	146	--	104	101	--	67	14	65	13	59	45	--	97	1.4
DEKALB	DK-44	136	142	150	139	142	99	96	106	67	13	65	13	59	44	--	98	1.3
DEKALB	DK-45	141	162	151	152	152	103	109	107	67	13	65	13	57	48	--	89	1.4
TRIUMPH	TR 464	134	--	--	--	--	98	--	--	--	--	65	13	58	51	--	85	1.6
U.A.P.	UAP-751B	133	--	--	--	--	97	--	--	--	--	65	13	59	47	--	92	1.7
U.A.P.	UAP-740C	109	--	--	--	--	80	--	--	--	--	65	13	60	43	--	85	1.4
ASGROW	A459	150	154	--	152	--	110	104	--	68	13	66	12	60	49	--	95	1.3
CARGILL	770Y	155	141	146	148	147	113	95	104	68	12	66	12	55	46	--	93	1.5
NK	K59-Y2	142	149	--	146	--	104	101	--	72	13	66	12	56	49	--	96	1.3
GAUCHO CHECK	NC+271(N)	136	--	--	--	--	99	--	--	--	--	66	13	59	49	--	94	1.5

(continued)

TABLE 13. ELLIS CO. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
U.A.P.	UAP-760C	132	--	--	--	--	96	--	--	--	--	66	13	59	49	--	98	1.4
AGRIPRO	AP 2731	150	--	--	--	--	109	--	--	--	--	66	14	60	52	--	95	1.5
HOEGEMEYER	6766	138	162	151	150	150	101	109	106	68	14	66	14	61	52	--	96	1.5
CARGILL	730	141	151	127	146	140	103	102	90	69	13	67	12	59	47	--	91	1.3
GAUCHO CHECK	NC+271(G)	139	--	--	--	--	102	--	--	--	--	67	13	60	49	--	88	1.5
GOLDEN WORLD	GW 1489	153	162	--	158	--	112	109	--	69	14	67	13	60	51	--	94	1.4
MIDLAND	XM-614	133	--	--	--	--	97	--	--	--	--	67	13	61	45	--	89	1.8
MIDLAND	M-4725	139	153	--	146	--	102	103	--	72	14	67	13	60	49	--	91	1.5
MIDWEST SEED	G 571	151	--	152	--	--	110	--	107	--	--	67	14	58	52	--	98	1.4
HOEGEMEYER	6712	134	--	--	--	--	98	--	--	--	--	68	13	59	45	--	94	1.6
HOEGEMEYER	6874	143	153	148	148	148	104	103	104	69	13	68	13	61	50	--	98	1.5
MATURITY CHECK	TX2752xTX430	155	168	148	162	157	113	113	105	71	13	68	13	58	49	--	96	1.4
MIDLAND	M-4757Y	139	167	--	153	--	102	112	--	70	13	68	13	59	52	--	91	1.4
PIONEER	84G62	157	157	--	157	--	115	106	--	73	13	68	13	60	47	--	93	1.5
MIDLAND	M-4774	141	153	--	147	--	103	103	--	68	14	68	14	60	51	--	97	1.5
MIDLAND	M-4836	141	166	--	154	--	103	112	--	72	13	69	12	59	46	--	89	1.6
GAUCHO CHECK	DK-56(N)	136	--	--	--	--	99	--	--	--	--	69	13	60	51	--	94	1.4
MYCOGEN	EXP X9881	141	--	--	--	--	103	--	--	--	--	69	13	57	45	--	97	1.4
GAUCHO CHECK	DK-56(G)	147	--	--	--	--	107	--	--	--	--	69	14	60	51	--	100	1.4
MATURITY CHECK	TX2752xTX2783	147	165	158	156	157	107	111	112	72	14	70	13	60	54	--	92	1.4
DEKALB	DK-53	148	--	--	--	--	108	--	--	--	--	70	14	61	51	--	88	1.2
TRIUMPH	TR 481	139	--	--	--	--	102	--	--	--	--	70	14	60	55	--	94	1.4
MIDLAND	XM-818E	145	--	--	--	--	106	--	--	--	--	71	14	57	58	--	104	1.5
AVERAGES		137	148	142	143	142	137	148	142	68	13	65	13	59	46	--	93	1.5
CV(%)		6	7	5	--	--	6	7	5	--	--	1	4	2	4	--	7	11.0
LSD(0.05)**		11	15	10	--	--	8	10	7	--	--	1	1	2	2	--	NS	0.2

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

NORTHWESTERN KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, FALLOW

COUNTY: THOMAS

LOCATION: Northwest Research-Extension Center, Colby

TEST SITE: Keith silt loam

1998 CROP: Fallow

1997 CROP: Sunflower

FERTILIZER (lbs/acre): 100 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/26/99

HARVEST DATE: 10/22/99

COOPERATORS:

Patrick Evans, agronomist

TARGET POPULATION: 24,000 plants/acre,

8.7 in. spacing

STAND (% of target): 97

YIELD: Average (bu/a): 145

Range (bu/a): 111 - 178

LSD (bu/a): 10

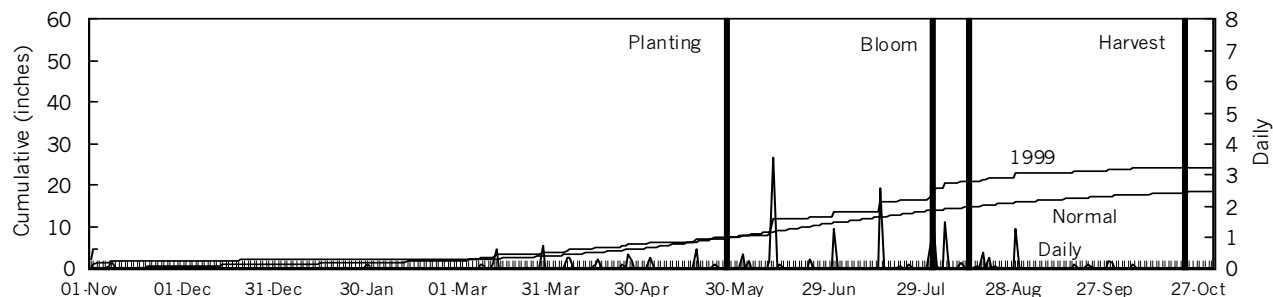
CV (%): 6

BLOOM DATES: 8/1/99 - 8/13/99

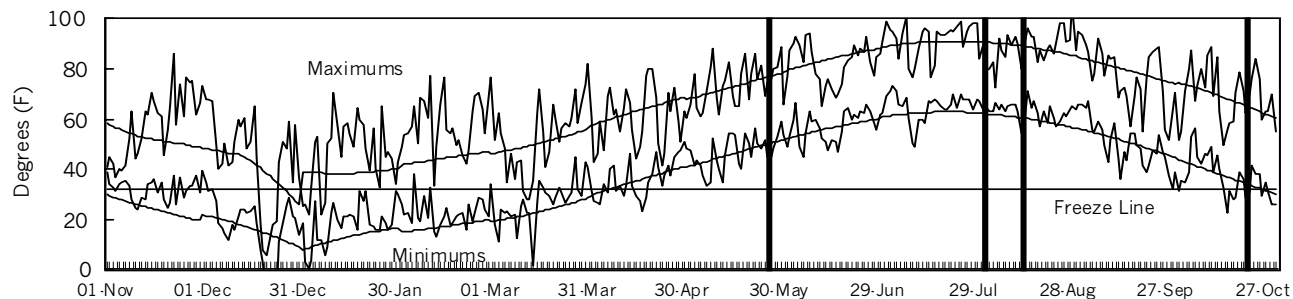
1999 GROWING CONDITIONS

Very good planting conditions contributed to generally good stands. Favorable conditions during the entire season facilitated very good yields. Yields of check hybrids treated with seedborne insecticide were not significantly higher.

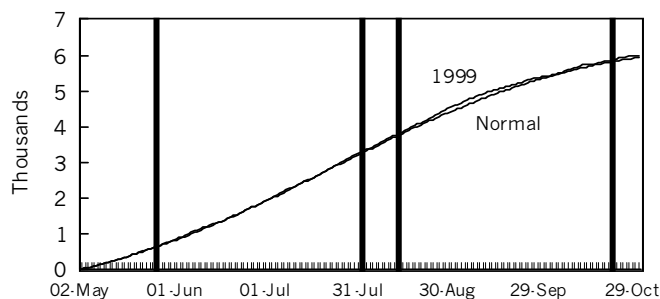
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	2.0	1.8	48	49	0	0
May	1.3	2.9	60	60	792	781
June	5.0	3.1	70	70	1072	1093
July	4.2	3.0	78	76	1378	1317
August	6.6	2.2	76	74	1303	1241
Sep.	0.8	1.5	63	65	859	928
Oct.	0.2	1.1	53	53	595	574
Season Totals	20.1	15.6	64	64	5999	5934

TABLE 14. THOMAS CO. DRY. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plant Ht. in.	Final Ldg %	Hds Stand per Plnt	
					AVG.	AVG.												
MATURITY CHECK	C 305	127	106	63	116	98	87	83	90	68	14	67	13	56	46	0	96	2.0
NK	KS 310	119	--	--	--	--	82	--	--	--	--	68	12	56	43	0	95	1.8
MATURITY CHECK	TX3042xTX2737	145	140	76	143	121	100	110	110	70	14	68	13	57	48	0	97	2.0
PIONEER	87G57	125	132	71	129	109	86	103	102	68	14	68	13	56	44	0	99	2.0
CARGILL	576	133	96	51	114	93	91	75	73	69	15	68	14	57	40	0	99	2.0
ASGROW	A201	134	--	--	--	--	92	--	--	--	--	69	13	56	41	0	99	2.2
GARST	5616	135	130	--	132	--	93	101	--	73	15	69	14	57	46	0	98	1.8
FRONTIER	F270E	125	--	--	--	--	86	--	--	--	--	70	13	56	42	0	98	1.7
PIONEER	8699	132	--	68	--	--	91	--	98	--	--	70	13	57	45	0	98	2.1
ASGROW	SENECA	133	124	--	129	--	92	97	--	73	15	70	14	58	45	0	98	2.0
GOLDEN WORLD	GW 5972	132	--	--	--	--	91	--	--	--	--	70	14	57	46	0	99	1.8
MIDWEST SEED	G 530	135	--	--	--	--	93	--	--	--	--	70	14	59	44	0	99	1.5
NK	KS 585	166	139	74	152	126	114	109	106	73	16	70	14	57	47	0	99	2.4
PIONEER	8505	154	135	--	145	--	106	106	--	71	15	70	14	59	47	0	100	2.1
U.A.P.	UAP-732B	122	--	--	--	--	84	--	--	--	--	70	14	58	46	0	98	1.5
DEKALB	DK-35	152	127	64	140	115	105	100	92	72	15	70	15	58	45	0	101	2.0
NC+	5B74E	140	136	78	138	118	96	106	113	72	16	70	15	56	44	0	98	2.1
NC+	Y363	157	134	91	145	127	108	105	131	72	16	70	15	56	50	0	97	2.4
MATURITY CHECK	RS 610	119	106	52	112	92	82	83	75	72	14	71	13	56	47	0	86	1.9
U.A.P.	UAP-731B	111	--	--	--	--	76	--	--	--	--	71	13	56	42	0	95	1.5
MYCOGEN	M3838	132	--	62	--	--	91	--	88	--	--	71	14	59	45	0	94	1.6
CARGILL	647	138	136	80	137	118	95	106	114	74	15	72	14	58	48	0	99	2.0
CARGILL	627	150	121	80	135	117	103	95	115	74	15	72	14	56	47	0	97	2.0
MATURITY CHECK	OK11xTX2741	125	118	70	122	105	86	92	101	72	14	72	14	58	45	0	92	1.5
MIDLAND	XM-98105	160	--	--	--	--	110	--	--	--	--	72	14	56	45	0	94	2.5
U.A.P.	UAP-740C	127	--	--	--	--	88	--	--	--	--	72	14	57	46	0	91	1.7
U.A.P.	UAP-730B	142	--	--	--	--	98	--	--	--	--	72	15	57	46	0	96	1.8
CARGILL	737	151	122	70	137	115	104	95	101	76	17	73	14	56	45	0	96	2.1
DEKALB	DK-45	154	136	64	145	118	106	106	92	74	15	73	14	56	50	0	98	1.8
DEKALB	DK-43A	152	138	70	145	120	105	108	100	75	15	73	14	57	44	0	96	2.0
DEKALB	DK-44	150	130	69	140	116	103	102	98	74	15	73	14	56	46	0	98	1.9
CARGILL	697	150	123	--	136	--	103	96	--	75	16	73	15	56	48	0	100	1.7
ASGROW	A355	143	--	--	--	--	98	--	--	--	--	74	14	55	47	0	92	2.0
NC+	6R30	149	--	--	--	--	103	--	--	--	--	74	14	55	45	0	98	2.1
TRIUMPH	TR 447	134	118	--	126	--	92	92	--	75	15	74	14	57	44	0	96	1.8
MIDLAND	M-4774	167	--	--	--	--	115	--	--	--	--	74	16	56	50	0	101	1.8
MIDWEST SEED	G 571	160	--	--	--	--	110	--	--	--	--	74	16	56	50	0	99	1.7
CARGILL	770Y	151	147	81	149	126	104	115	116	76	15	75	13	53	48	0	99	2.0
AGRIPRO	HY 2660	140	--	--	--	--	96	--	--	--	--	75	14	58	46	0	96	1.5
GARST	5664	140	--	--	--	--	96	--	--	--	--	75	14	56	43	0	92	2.1
GOLDEN WORLD	GW 1489	151	122	--	136	--	104	95	--	77	16	75	14	57	50	0	96	1.7

(continued)

TABLE 14. THOMAS CO. DRY. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
U.A.P.	UAP-751B	157	--	--	--	--	108	--	--	--	--	75	14	57	47	0	96	2.0
GAUCHO CHECK	DK-56(G)	159	--	--	--	--	109	--	--	--	--	75	15	58	52	0	98	1.8
MIDLAND	XM-614	153	--	--	--	--	105	--	--	--	--	75	15	56	47	0	96	2.0
MIDLAND	M-4757Y	157	143	--	150	--	108	112	--	75	17	75	16	55	52	0	96	1.9
CARGILL	730	160	131	82	146	125	110	102	118	77	15	76	14	56	47	0	98	2.2
MATURITY CHECK	TX2752xTX430	178	147	87	163	137	123	115	125	78	16	76	14	54	48	0	99	2.0
MIDLAND	M-4836	159	134	--	146	--	110	105	--	77	14	76	14	58	47	0	97	2.2
TRIUMPH	TR 461	158	139	--	148	--	109	109	--	77	15	76	14	58	51	0	98	1.8
ASGROW	A459	146	144	--	145	--	100	113	--	77	16	76	15	57	48	0	99	1.6
GAUCHO CHECK	NC+271(N)	152	--	--	--	--	104	--	--	--	--	76	15	56	49	0	98	1.7
MYCOGEN	EXP X9881	151	--	--	--	--	104	--	--	--	--	76	15	55	44	0	91	2.1
MIDLAND	XM-818E	159	--	--	--	--	110	--	--	--	--	76	16	56	53	0	100	1.3
GAUCHO CHECK	NC+271(G)	151	--	--	--	--	104	--	--	--	--	77	15	55	48	0	94	1.8
U.A.P.	UAP-760C	157	--	--	--	--	108	--	--	--	--	77	15	56	48	0	98	1.7
GAUCHO CHECK	DK-56(N)	157	--	--	--	--	108	--	--	--	--	77	16	57	52	0	94	1.8
MATURITY CHECK	TX2752xTX2783	164	142	74	153	126	113	111	106	80	17	79	16	57	52	0	96	1.9
AVERAGES		145	128	70	136	114	145	128	70	74	15	73	14	57	47	0	97	1.9
CV(%)		6	8	11	--	--	6	8	11	--	--	1	4	2	2	--	5	9.5
LSD(0.05)**		10	12	9	--	--	7	9	13	--	--	1	1	1	1	NS	5	0.2

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTHWESTERN KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, FALLOW

COUNTY: FINNEY

LOCATION: Southwest Research-Extension Center, Garden City

TEST SITE: Keith silt loam

1998 CROP: Fallow

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 80 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/24/99

HARVEST DATE: 10/12/99

COOPERATORS:

Merle Witt, agronomist

TARGET POPULATION: 30,000 plants/acre,

7.0 in. spacing

STAND (% of target): 127

YIELD: Average (bu/a): 87

Range (bu/a): 58 - 109

LSD (bu/a): 12

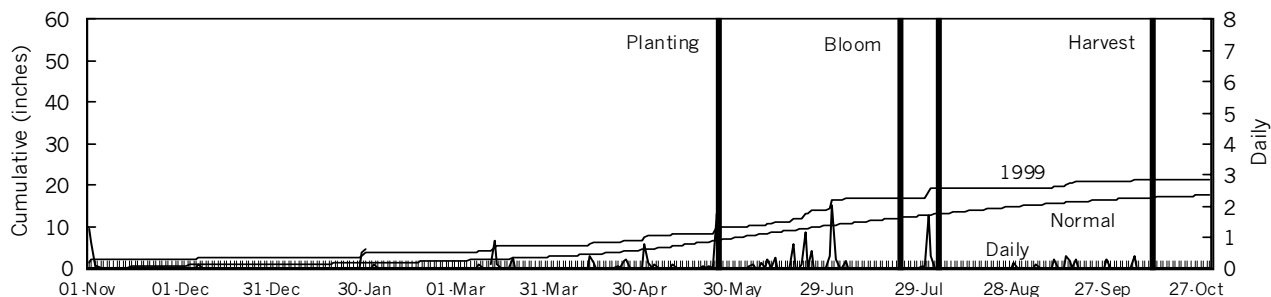
CV (%): 10

BLOOM DATES: 7/22/99 - 8/4/99

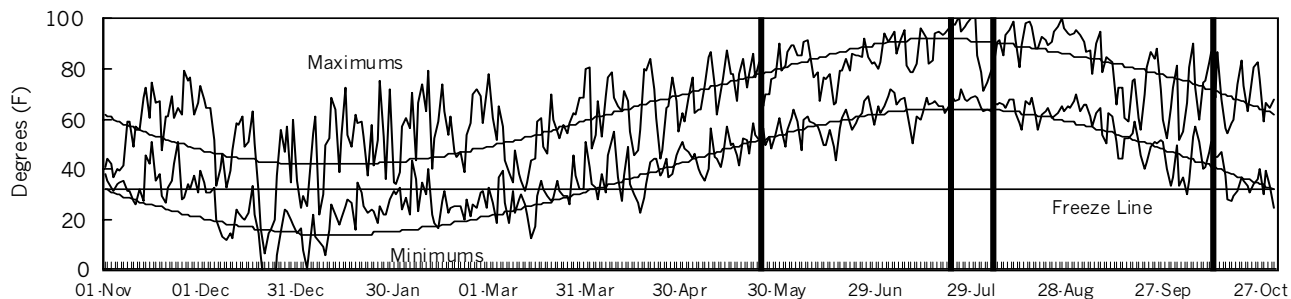
1999 GROWING CONDITIONS

Favorable planting and growing conditions enabled the test to get off to a good start. A July 1 hailstorm damaged the test slightly, causing primarily cosmetic damage. No disease or insect damage was noted. Seed-applied insecticide caused no significant yield advantage in two check hybrids.

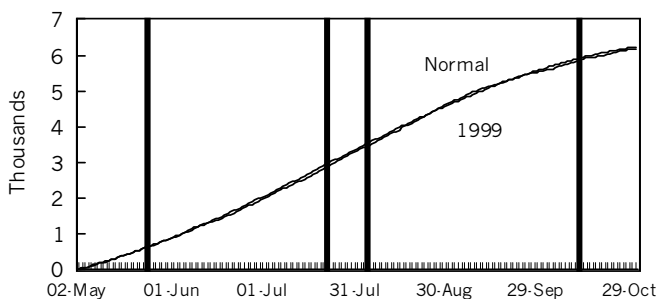
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	1.3	1.7	51	51	0	0
May	3.2	2.9	62	62	839	842
June	4.2	2.9	70	72	1075	1145
July	2.7	2.5	79	78	1389	1352
August	2.4	2.2	77	75	1341	1275
Sep.	1.7	1.6	64	67	906	986
Oct.	0.4	1.0	55	54	637	632
Season Totals	15.9	14.8	65	66	6185	6231

TABLE 15. FINNEY CO. DRY. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand per %	Hds per Plnt
					AVG.	AVG.												
MATURITY CHECK	C 305	65	61	79	63	68	73	75	93	59	13	59	13	59	45	3	112	1.8
DEKALB	DK-35	90	72	99	81	87	102	89	116	62	13	61	14	60	43	0	157	1.5
PIONEER	87G57	85	82	73	83	80	96	101	85	60	13	61	14	60	43	2	131	1.8
ASGROW	A201	58	--	--	--	--	65	--	--	--	--	62	14	58	37	14	131	1.5
GARST	5515	85	--	--	--	--	96	--	--	--	--	62	14	60	47	1	127	1.5
GARST	5616	85	85	--	85	--	96	105	--	64	14	62	14	60	43	0	137	1.5
MATURITY CHECK	TX3042xTX2737	78	84	92	81	85	88	103	108	64	13	62	14	59	47	5	114	1.7
NC+	6R30	91	--	--	--	--	103	--	--	--	--	62	14	60	42	0	131	1.8
CARGILL	647	81	79	82	80	81	92	97	97	64	14	63	14	61	46	0	142	1.5
HYTEST	HTG660	84	--	--	--	--	94	--	--	--	--	63	14	59	42	1	144	1.5
HYTEST	HTG629	94	--	--	--	--	106	--	--	--	--	63	14	61	40	0	134	1.5
MATURITY CHECK	RS 610	75	65	81	70	74	85	80	96	63	13	63	14	59	44	0	121	1.7
MYCOGEN	M3838	72	81	88	77	81	81	100	104	66	13	63	14	61	40	1	125	1.3
NK	KS 585	88	91	88	89	89	99	111	104	69	14	63	14	61	42	0	129	1.8
U.A.P.	UAP-731B	71	--	--	--	--	80	--	--	--	--	63	14	60	41	0	137	1.3
U.A.P.	UAP-730B	101	--	--	--	--	114	--	--	--	--	63	14	61	42	0	148	1.5
GOLDEN WORLD	GW 5972	76	--	--	--	--	86	--	--	--	--	64	14	60	43	3	90	1.5
MIDWEST SEED	G 530	70	--	--	--	--	79	--	--	--	--	64	14	60	42	2	118	1.3
NC+	5B74E	90	88	83	89	87	101	108	97	65	14	64	14	59	42	0	138	1.6
PIONEER	8505	92	69	--	81	--	104	85	--	63	13	64	14	60	46	1	105	1.8
CARGILL	627	86	72	91	79	83	97	89	107	65	13	65	14	59	44	2	108	1.5
MATURITY CHECK	OK11xTX2741	73	64	80	68	72	82	78	94	68	13	65	14	60	44	3	131	1.4
U.A.P.	UAP-732B	74	--	--	--	--	83	--	--	--	--	65	14	60	43	3	117	1.4
ASGROW	A459	83	85	--	84	--	94	104	--	68	13	66	14	60	47	1	162	1.1
ASGROW	SENECA	96	84	--	90	--	109	103	--	67	13	66	14	60	40	2	117	1.7
CARGILL	737	100	94	90	97	95	113	115	106	69	13	66	14	59	43	0	128	1.4
DEKALB	DK-44	76	84	84	80	81	85	103	98	66	14	66	14	60	44	0	119	1.3
U.A.P.	UAP-740C	67	--	--	--	--	75	--	--	--	--	66	14	60	43	0	115	1.4
GOLDEN WORLD	GW 1489	92	103	--	97	--	104	127	--	69	14	66	15	60	48	2	142	1.4
NC+	6B50	100	98	89	99	96	113	120	105	68	14	67	14	60	45	0	144	1.4
CARGILL	697	104	86	--	95	--	117	105	--	67	14	67	15	60	45	0	129	1.5
WARNER	W-818-E	96	--	--	--	--	109	--	--	--	--	67	15	60	49	0	140	1.3
AGRIPRO	AP 2838	95	81	--	88	--	107	100	--	70	13	68	14	60	44	0	123	1.4
ASGROW	A355	84	--	--	--	--	94	--	--	--	--	68	14	60	44	4	92	1.7
GARST	5664	98	--	--	--	--	110	--	--	--	--	68	14	60	42	0	140	1.3
NK	K59-Y2	95	90	--	92	--	107	111	--	71	13	68	14	59	48	0	133	1.4
WARNER	W-625-Y	104	92	--	98	--	118	114	--	67	13	68	14	60	49	0	115	1.4
DEKALB	DK-43A	94	86	96	90	92	106	105	113	70	14	68	15	60	43	3	126	1.4
DEKALB	DK-45	87	74	93	80	84	98	90	109	67	14	68	15	59	48	2	135	1.3
MIDLAND	M-4774	97	--	--	--	--	109	--	--	--	--	68	16	60	49	0	129	1.4
AGRIPRO	HY 2660	99	92	--	95	--	112	113	--	70	14	69	15	60	44	1	108	1.4

(continued)

TABLE 15. FINNEY CO. DRY. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
GAUCHO CHECK	DK-56(G)	84	--	--	--	--	94	--	--	--	--	69	15	60	49	0	138	1.3
GAUCHO CHECK	DK-56(N)	105	--	--	--	--	119	--	--	--	--	69	15	60	49	0	136	1.3
MIDWEST SEED	G 571	94	91	87	93	91	107	112	103	68	15	69	16	60	47	0	120	1.5
CARGILL	770Y	93	86	88	90	89	105	106	104	71	13	70	14	59	45	1	128	1.5
GAUCHO CHECK	NC+271(G)	100	--	--	--	--	112	--	--	--	--	70	14	60	47	0	129	1.5
DEKALB	DK-53	98	--	--	--	--	111	--	--	--	--	70	15	60	50	0	143	1.2
GAUCHO CHECK	NC+271(N)	88	--	--	--	--	100	--	--	--	--	70	15	60	47	0	131	1.6
MIDLAND	M-4757Y	95	79	--	87	--	107	97	--	71	14	70	15	60	47	0	136	1.3
PIONEER	84G62	103	90	--	97	--	116	111	--	74	14	70	15	60	46	1	111	1.6
TRIUMPH	TR 462	82	--	85	--	--	92	--	99	--	--	70	15	60	44	0	115	1.5
MATURITY CHECK	TX2752xTX430	109	88	105	99	101	123	108	124	72	14	71	15	59	45	0	115	1.6
MATURITY CHECK	TX2752xTX2783	88	93	104	90	95	99	114	122	74	14	71	15	60	48	3	127	1.4
MYCOGEN	EXP X9881	89	--	--	--	--	100	--	--	--	--	71	15	59	43	0	112	1.6
TRIUMPH	TR 481	90	83	--	87	--	102	102	--	73	14	71	15	60	47	0	125	1.3
U.A.P.	UAP-751B	85	--	--	--	--	96	--	--	--	--	71	15	59	43	0	98	1.7
U.A.P.	UAP-760C	98	--	--	--	--	110	--	--	--	--	71	15	59	47	0	145	1.3
CARGILL	730	108	97	81	102	95	122	119	96	72	13	72	14	59	45	1	132	1.3
AVERAGES		89	81	85	85	85	89	81	85	68	13	66	14	60	45	1	127	1.5
CV(%)		10	10	9	--	--	10	10	9	--	--	2	4	1	3	220	12	9.0
LSD(0.05)**		12	11	11	--	--	14	14	13	--	--	2	1	1	2	3	20	0.2

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

TABLE 16. WEST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹					1997-1999		
		ELD	THD	GRD	FND	AVG.	DYA (bu/a) ²	SE ³	N ⁴
c	MATURITY CHECK TX2752xTX430	113	123	--	123	120	23 *	2	11
	MIDLAND M-4757Y	102	108	--	107	106	19 *	5	7
	ASGROW A459	110	100	--	94	101	17 *	5	7
	GOLDEN WORLD GW 1489	112	104	--	104	106	17 *	4	7
	MATURITY CHECK TX2752xTX2783	107	113	--	99	106	17 *	2	11
	CARGILL 770Y	113	104	--	105	107	15 *	3	11
	CARGILL 737	111	104	--	113	109	14 *	3	11
	MIDLAND M-4836	103	110	--	--	--	14 *	4	6
	MIDWEST SEED G 571	110	110	--	107	109	14 *	3	6
	CARGILL 730	103	110	--	122	112	13 *	3	11
	DEKALB DK-43A	96	105	--	106	103	13 *	3	11
	NC+ 6B50	100	--	--	113	--	13 *	4	9
	NC+ Y363	97	108	--	--	--	12 *	3	9
	NK K59-Y2	104	--	--	107	--	12 *	2	6
	NK KS 585	102	114	--	99	105	10 *	3	11
	DEKALB DK-45	103	106	--	98	102	9 *	3	11
	GARST 5616	93	93	--	96	94	9	5	7
	CARGILL 647	103	95	--	92	96	8	5	9
	NC+ 5B74E	96	96	--	101	98	8 *	3	11
	PIONEER 8505	101	106	--	104	104	8	4	9
	CARGILL 627	104	103	--	97	101	7 *	2	10
	DEKALB DK-35	109	105	--	102	105	6	4	11
	MATURITY CHECK TX3042xTX2737	96	100	--	88	95	6 *	2	11
	ASGROW SENECA	90	92	--	109	97	5	5	7
	DEKALB DK-44	99	103	--	85	96	5	4	11
	GARST 5631Y	98	--	--	--	--	4	4	7
	MYCOGEN M3838	102	91	--	81	91	0	3	9
	PIONEER 87G57	93	86	--	96	92	-1	5	9
	MATURITY CHECK OK11xTX2741	92	86	--	82	87	-4	3	11
c	MATURITY CHECK C 305	97	87	--	73	86	-10 *	2	11
c	MATURITY CHECK RS 610	80	82	--	85	82	-13 *	2	11
	AGRIPRO AP 2731	109	--	--	--	--	--	--	--
	AGRIPRO AP 2838	--	--	--	107	--	--	--	--
	AGRIPRO HY 2660	--	96	--	112	--	--	--	--
	ASGROW A201	83	92	--	65	80	--	--	--
	ASGROW A355	100	98	--	94	97	--	--	--
	CARGILL 576	--	91	--	--	--	--	--	--
	CARGILL 697	--	103	--	117	--	--	--	--
	DEKALB DK-53	108	--	--	110	--	--	--	--
	FRONTIER F270E	--	86	--	--	--	--	--	--
	GARST 5515	100	--	--	96	--	--	--	--
	GARST 5664	85	96	--	110	97	--	--	--
	GAUCHO CHECK DK-56(G)	107	109	--	94	104	--	--	--

(continued)

TABLE 16. WEST KANSAS GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹					1997-1999		
		ELD	THD	GRD	FND	AVG.	DYA (bu/a) ²	SE ³	N ⁴
GAUCHO CHECK	DK-56(N)	99	108	--	119	109	--	--	--
GAUCHO CHECK	NC+271(G)	102	104	--	112	106	--	--	--
GAUCHO CHECK	NC+271(N)	99	104	--	100	101	--	--	--
GOLDEN WORLD	GW 5972	98	91	--	86	91	--	--	--
HOEGEMEYER	6712	98	--	--	--	--	--	--	--
HOEGEMEYER	6766	101	--	--	--	--	--	--	--
HOEGEMEYER	6874	104	--	--	--	--	--	--	--
HYTEST	HTG629	99	--	--	106	--	--	--	--
HYTEST	HTG660	103	--	--	94	--	--	--	--
MIDLAND	M-4725	102	--	--	--	--	--	--	--
MIDLAND	M-4774	103	115	--	109	109	--	--	--
MIDLAND	XM-614	97	105	--	--	--	--	--	--
MIDLAND	XM-818E	106	110	--	--	--	--	--	--
MIDLAND	XM-98105	108	110	--	--	--	--	--	--
MIDWEST SEED	G 530	93	93	--	79	88	--	--	--
MYCOGEN	EXP X9881	103	104	--	100	102	--	--	--
NC+	6R30	94	103	--	103	100	--	--	--
NK	KS 310	--	82	--	--	--	--	--	--
PIONEER	84G62	115	--	--	116	--	--	--	--
PIONEER	8699	--	91	--	--	--	--	--	--
TRIUMPH	TR 447	--	92	--	--	--	--	--	--
TRIUMPH	TR 461	--	109	--	--	--	--	--	--
TRIUMPH	TR 462	--	--	--	92	--	--	--	--
TRIUMPH	TR 464	98	--	--	--	--	--	--	--
TRIUMPH	TR 481	102	--	--	102	--	--	--	--
U.A.P.	UAP-730B	97	98	--	114	103	--	--	--
U.A.P.	UAP-731B	89	76	--	80	82	--	--	--
U.A.P.	UAP-732B	87	84	--	83	85	--	--	--
U.A.P.	UAP-740C	80	88	--	75	81	--	--	--
U.A.P.	UAP-751B	97	108	--	96	100	--	--	--
U.A.P.	UAP-760C	96	108	--	110	105	--	--	--
WARNER	W-625-Y	--	--	--	118	--	--	--	--
WARNER	W-818-E	--	--	--	109	--	--	--	--
AVERAGES		137	145	--	89	124	--	--	--
CV(%)		6	6	--	10	--	--	--	--
LSD(0.05)**		8	7	--	14	--	--	--	--

¹ ELD = Ellis Co. Test, KSU Ag. Research Center, Hays

THD = Thomas Co. Test, Northwest Res. Ext. Center, Colby

GRD = Greeley Co. Test, Southwest Rex. Ext. Center, Tribune

FND = Finney Co. Test, Southwest Rex. Ext. Center, Garden City

² DYA = Differential Yielding Ability; average difference of hybrid yield compared to average of check hybrids in bushels per acre.

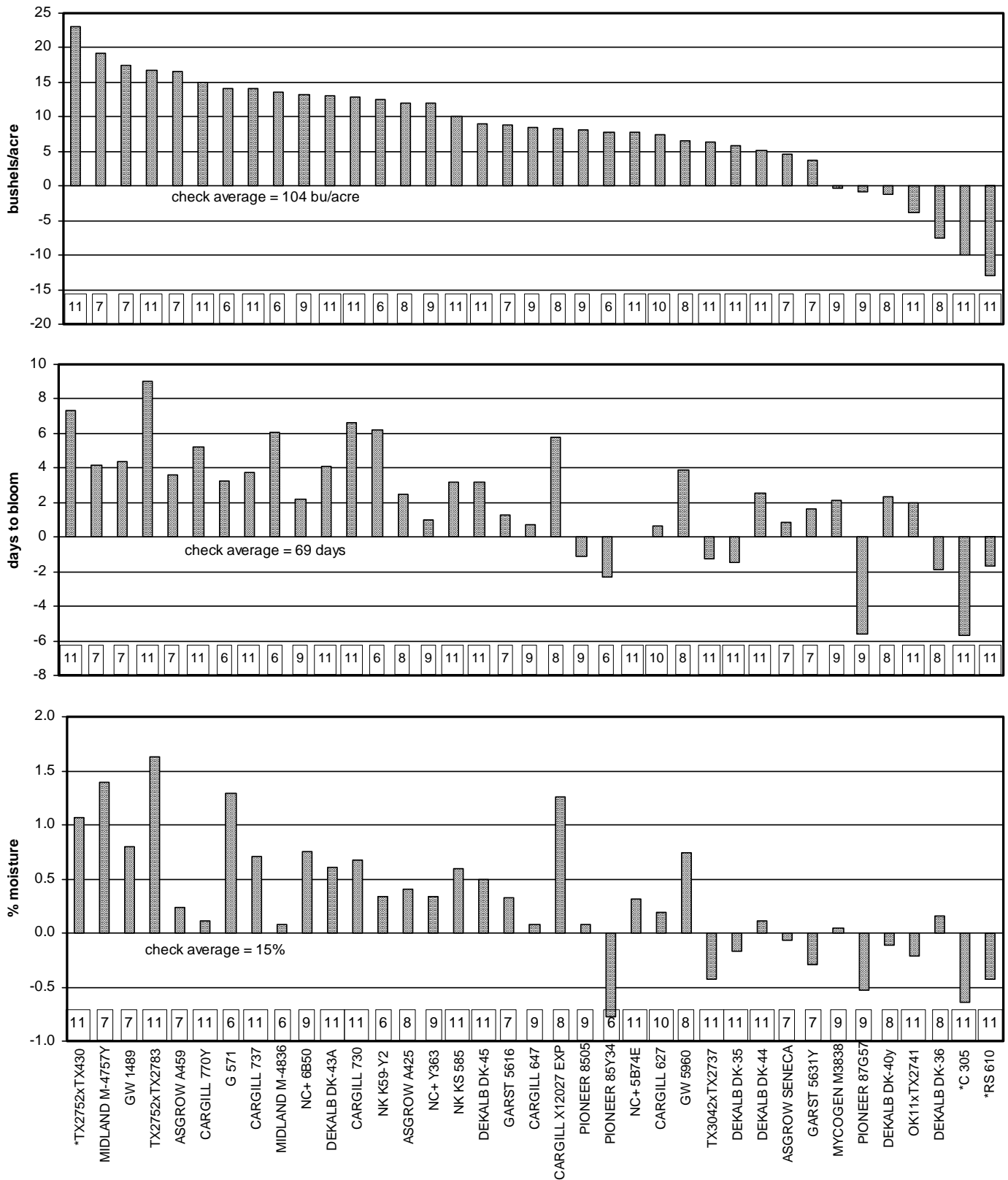
³ SE = Standard Error of DYA; measure of consistency of yield differences.

⁴ N = Number of tests where hybrid was compared with checks; DYA was calculated only for those with at least 6 comparisons.

^c Check hybrid; yield of each hybrid was compared to the average yield of these check hybrids.

* Statistically significantly different from the average of the check hybrids, which = 0 (P < 0.5).

FIGURE 9. WEST KANSAS SORGHUM HYBRID PERFORMANCE SUMMARY, 1997-1999.



Bars show differences between hybrid and average of check hybrids*. Values in boxes are numbers of tests where hybrids and checks were compared.

NORTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, IRRIGATED

COUNTY: REPUBLIC

LOCATION: Irrigation Experiment Field, Scandia

TEST SITE: Crete silt loam

1998 CROP: Corn

1997 CROP: Soybean

FERTILIZER (lbs/acre): 175 N 30 P₂O₅ 0 K₂O

PLANTING DATE: 5/27/99

HARVEST DATE: 10/12/99

COOPERATORS:

Barney Gordon, agronomist; Michael Larson and Allan Milner, technicians

TARGET POPULATION: 84,000 plants/acre,
2.5 in. spacing

STAND (% of target): 97

YIELD: Average (bu/a): 161

Range (bu/a): 130 - 185

LSD (bu/a): 6

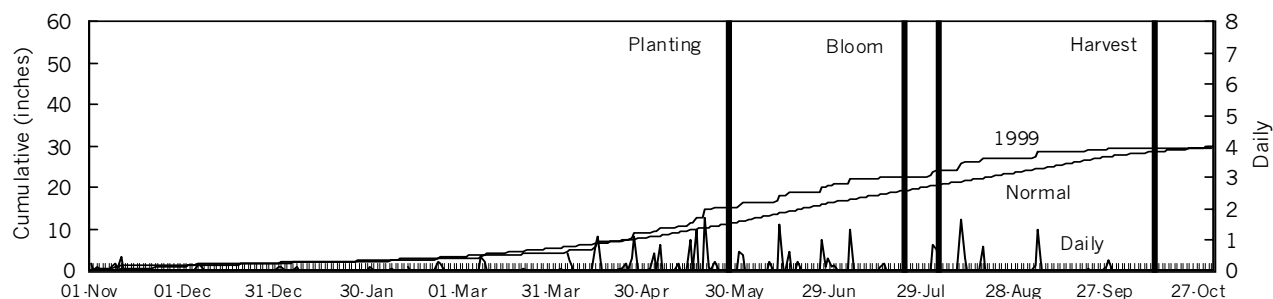
CV (%): 3

BLOOM DATES: 7/23/99 - 8/5/99

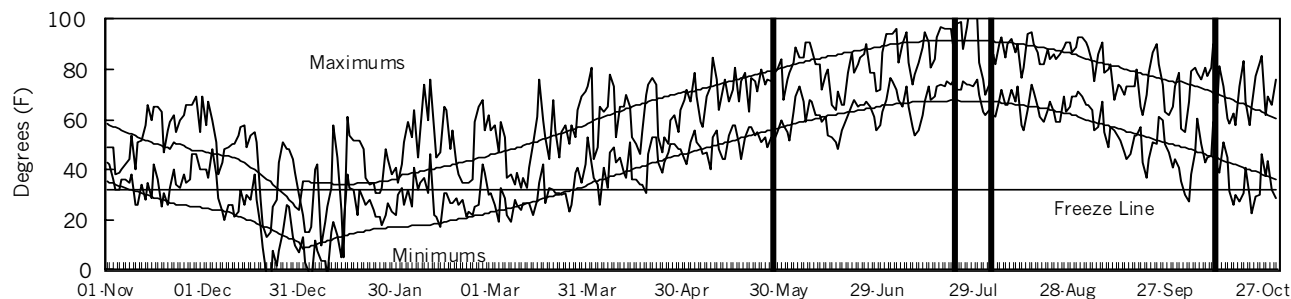
1999 GROWING CONDITIONS

Rains delayed planting until May 27. July precipitation was below normal. The test was irrigated just before boot stage and again during seed fill. Rainfall occurred during blooming. No disease or insect problems were noted; however, seed-applied insecticide provided a significant yield advantage for one check hybrid.

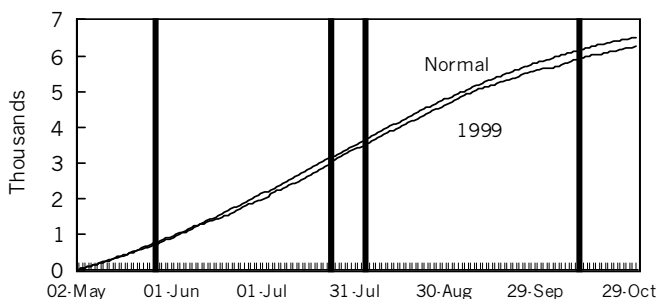
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	4.9	2.5	52	53	0	0
May	6.9	4.0	62	64	852	902
June	5.0	4.6	70	74	1090	1188
July	2.0	3.8	81	79	1442	1398
August	4.5	3.7	76	77	1293	1335
Sep.	2.1	3.9	65	67	931	1004
Oct.	0.0	2.0	55	56	652	678
Season Totals	25.4	24.5	66	67	6259	6505

TABLE 17. REPUBLIC CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
MATURITY CHECK	C 305	130	--	--	--	--	81	--	--	--	--	57	12	61	47	--	94	1.1
MATURITY CHECK	RS 610	135	--	--	--	--	84	--	--	--	--	60	12	60	49	--	96	1.1
MATURITY CHECK	TX3042xTX2737	159	--	--	--	--	99	--	--	--	--	60	12	61	54	--	98	1.1
MYCOGEN	3696	157	--	--	--	--	97	--	--	--	--	61	12	60	44	--	93	1.1
PIONEER	8505	136	--	--	--	--	84	--	--	--	--	61	13	61	46	--	90	1.2
MATURITY CHECK	OK11xTX2741	132	--	--	--	--	82	--	--	--	--	62	12	60	42	--	101	1.1
ASGROW	A355	144	--	--	--	--	89	--	--	--	--	62	13	60	47	--	97	1.0
DEKALB	DK-47	171	--	--	--	--	106	--	--	--	--	63	12	61	48	--	98	1.1
AGRIPRO	AP 2838	171	--	--	--	--	106	--	--	--	--	64	12	61	51	--	94	1.1
ASGROW	A504	170	--	--	--	--	106	--	--	--	--	64	12	60	48	--	96	1.1
GAUCHO CHECK	NC+271(G)	153	--	--	--	--	95	--	--	--	--	64	12	60	51	--	92	1.2
GAUCHO CHECK	NC+271(N)	150	--	--	--	--	93	--	--	--	--	64	12	61	51	--	99	1.1
MIDLAND	XM-98105	170	--	--	--	--	106	--	--	--	--	64	12	60	46	--	90	1.1
U.A.P.	UAP-751B	145	--	--	--	--	90	--	--	--	--	64	12	60	45	--	88	1.2
ASGROW	A459	155	--	--	--	--	96	--	--	--	--	64	13	61	51	--	99	1.1
MIDLAND	M-4725	143	--	--	--	--	89	--	--	--	--	64	13	61	52	--	92	1.1
MIDLAND	XM-614	141	--	--	--	--	87	--	--	--	--	65	12	61	48	--	88	1.1
U.A.P.	UAP-760C	147	--	--	--	--	91	--	--	--	--	65	12	60	50	--	97	1.1
AGRIPRO	AP 2731	176	--	--	--	--	109	--	--	--	--	65	13	61	53	--	93	1.1
MIDLAND	M-4757Y	173	--	--	--	--	107	--	--	--	--	65	13	61	51	--	98	1.1
ASGROW	A571	185	--	--	--	--	115	--	--	--	--	66	12	60	50	--	114	1.0
DEKALB	X-758 EXP	180	--	--	--	--	112	--	--	--	--	66	12	61	49	--	98	1.1
MATURITY CHECK	TX2752xTX430	171	--	--	--	--	106	--	--	--	--	66	12	61	52	--	97	1.1
MIDLAND	M-4836	171	--	--	--	--	106	--	--	--	--	66	12	60	48	--	90	1.1
MYCOGEN	3700	173	--	--	--	--	108	--	--	--	--	66	12	61	51	--	110	1.0
DEKALB	DK-54	169	--	--	--	--	105	--	--	--	--	66	13	61	52	--	106	1.0
MATURITY CHECK	TX2752xTX2783	164	--	--	--	--	102	--	--	--	--	66	13	61	50	--	97	1.1
MYCOGEN	1506	172	--	--	--	--	107	--	--	--	--	66	13	61	52	--	90	1.2
DEKALB	DK-53	174	--	--	--	--	108	--	--	--	--	67	13	61	51	--	108	1.0
FRONTIER	F557E	167	--	--	--	--	104	--	--	--	--	67	13	61	52	--	100	1.1
GAUCHO CHECK	DK-56(N)	154	--	--	--	--	96	--	--	--	--	67	13	61	51	--	100	1.1
GAUCHO CHECK	DK-56(G)	172	--	--	--	--	107	--	--	--	--	67	13	61	52	--	106	1.0
MIDLAND	XM-818E	167	--	--	--	--	104	--	--	--	--	67	13	61	54	--	99	1.1
MYCOGEN	3694	155	--	--	--	--	97	--	--	--	--	67	13	60	49	--	100	1.0
DEKALB	DK-65	178	--	--	--	--	110	--	--	--	--	68	12	60	54	--	95	1.1
PIONEER	84G62	182	--	--	--	--	113	--	--	--	--	68	12	61	49	--	105	1.0
AVERAGES		161	--	--	--	--	161	--	--	--	--	65	12	61	50	--	97	1.1
CV(%)		3	--	--	--	--	3	--	--	--	--	1	1	0	2	--	6	5.0
LSD(0.05)**		6	--	--	--	--	4	--	--	--	--	1	0	0	1	--	7	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTH CENTRAL KANSAS GRAIN SORGHUM TEST ON SANDY LOAM, IRRIGATED

COUNTY: STAFFORD

LOCATION: Sandyland Experiment Field, St. John

TEST SITE: Naron loamy fine sand

1998 CROP: Wheat

1997 CROP: Soybean

FERTILIZER (lbs/acre): 168 N 46 P₂O₅ 0 K₂O

PLANTING DATE: 6/3/99

HARVEST DATE: 10/22/99

COOPERATORS:

Victor Martin, agronomist; Ron Cunningham and Jeff Scott, technicians

TARGET POPULATION: 84,000 plants/acre,
2.5 in. spacing

STAND (% of target): 104

YIELD: Average (bu/a): 162

Range (bu/a): 133 - 192

LSD (bu/a): 19

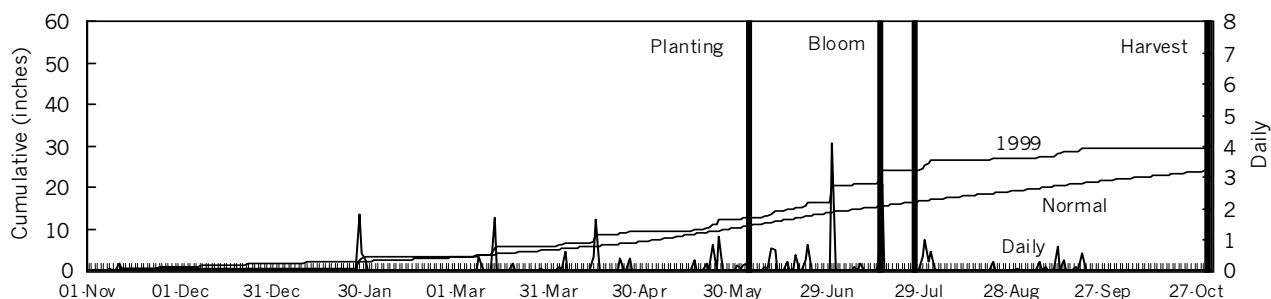
CV (%): 10

BLOOM DATES: 7/16/99 - 7/27/99

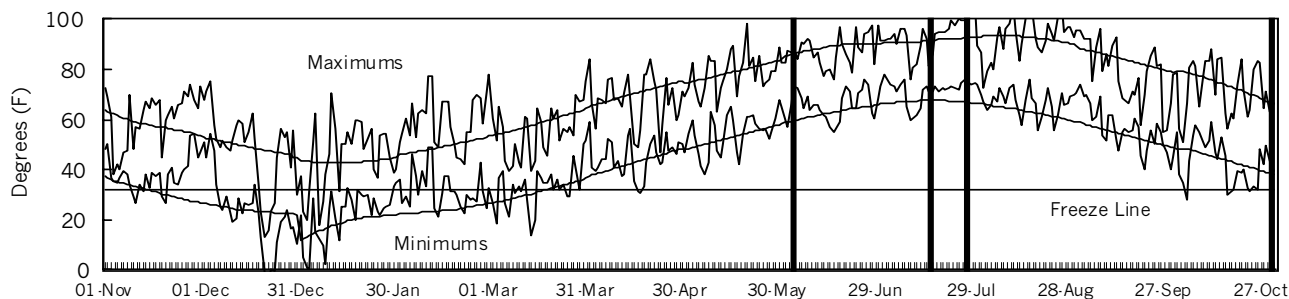
1999 GROWING CONDITIONS

Difficult weather conditions contributed to yield variability. Cool, wet weather delayed planting and early growth. Hot, dry conditions in August stressed the test. Yields of check hybrids with seed-applied insecticide were not significantly higher.

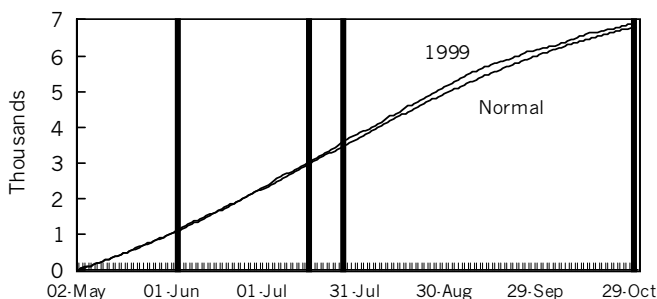
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	3.7	2.0	57	57	0	0
May	2.7	3.4	67	66	984	971
June	4.3	3.7	77	76	1276	1252
July	9.0	2.9	83	79	1505	1407
August	1.4	2.5	80	78	1428	1356
Sep.	2.4	2.5	67	69	996	1044
Oct.	0.0	2.2	58	59	734	769
Season Totals	23.4	19.1	70	69	6923	6800

TABLE 18. STAFFORD CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999				Final Ldg %	Hds Stand per Plnt	
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.			
					AVG.	AVG.												
MATURITY CHECK	C 305	133	97	129	115	120	82	87	93	47	12	43	8	47	48	--	97	1.0
MATURITY CHECK	TX3042xTX2737	144	87	128	116	120	89	78	92	47	13	44	10	49	53	--	117	1.0
ASGROW	A504	155	106	--	131	--	95	95	--	50	11	47	8	46	53	--	97	1.0
MATURITY CHECK	OK11xTX2741	141	104	137	123	127	87	93	99	49	12	47	10	52	47	--	102	1.0
U.A.P.	UAP-760C	145	--	--	--	--	89	--	--	--	--	47	10	51	53	--	104	1.0
DEKALB	DK-47	172	120	150	146	147	106	107	108	51	13	48	9	50	50	--	100	1.0
GAUCHO CHECK	NC+271(G)	153	--	--	--	--	95	--	--	--	--	48	9	48	56	--	104	1.0
MATURITY CHECK	RS 610	156	90	117	123	121	96	81	84	50	13	48	9	48	52	--	99	1.0
MIDLAND	M-4664	146	101	--	124	--	90	91	--	49	12	48	9	47	50	--	98	1.0
U.A.P.	UAP-751B	157	--	--	--	--	97	--	--	--	--	48	9	53	49	--	95	1.0
ASGROW	A355	148	--	--	--	--	91	--	--	--	--	48	10	52	52	--	90	1.0
DEKALB	DK-54	190	124	154	157	156	117	111	111	55	13	49	9	45	58	--	103	1.0
NC+	7B47	154	144	--	149	--	95	129	--	50	12	49	9	50	51	--	105	1.0
ASGROW	A459	161	99	--	130	--	99	88	--	50	13	49	10	49	56	--	103	1.0
CARGILL	770Y	165	--	--	--	--	101	--	--	--	--	50	9	49	57	--	100	1.0
CARGILL	737	175	--	--	--	--	108	--	--	--	--	50	9	47	50	--	107	1.0
DELANGE	DSA 133	165	--	--	--	--	102	--	--	--	--	50	9	50	53	--	106	1.0
GAUCHO CHECK	NC+271(N)	159	--	--	--	--	98	--	--	--	--	50	9	49	53	--	101	1.0
MIDLAND	M-4836	156	126	--	141	--	96	113	--	54	12	50	9	47	50	--	92	1.0
MYCOGEN	3694	167	--	--	--	--	103	--	--	--	--	50	9	50	54	--	108	1.0
MYCOGEN	3696	136	--	--	--	--	84	--	--	--	--	50	9	46	46	--	96	1.0
MYCOGEN	1506	178	--	138	--	--	110	--	100	--	--	50	9	48	56	--	94	1.0
AGRIPRO	AP 2838	163	--	--	--	--	100	--	--	--	--	50	10	50	51	--	99	1.0
MIDLAND	M-4774	153	103	--	128	--	94	93	--	52	13	50	10	50	53	--	100	1.0
MYCOGEN	3700	169	--	--	--	--	104	--	--	--	--	50	10	51	54	--	101	1.0
PIONEER	83G66	192	120	--	156	--	118	107	--	52	13	50	10	48	59	--	108	1.0
ASGROW	A571	157	129	--	143	--	97	115	--	52	13	51	9	51	54	--	113	1.0
NC+	7R83	167	109	141	138	139	103	98	102	53	13	51	10	51	53	--	118	1.0
AGRIPRO	AP 2731	174	--	--	--	--	107	--	--	--	--	52	9	48	57	--	101	1.0
CARGILL	730	172	--	--	--	--	106	--	--	--	--	52	9	50	52	--	109	1.0
DEKALB	DK-65	159	100	--	130	--	98	90	--	57	12	52	9	48	55	--	100	1.0
MATURITY CHECK	TX2752xTX430	183	106	143	144	144	113	95	103	53	13	52	9	49	53	--	118	1.0
MIDLAND	M-4757Y	163	118	--	141	--	101	106	--	54	12	52	9	49	55	--	100	1.0
ASGROW	A581	169	--	--	--	--	104	--	--	--	--	52	10	50	58	--	112	1.0
DEKALB	DK-53	177	133	--	155	--	109	119	--	57	13	52	10	51	55	--	105	1.0
GAUCHO CHECK	DK-56(N)	165	111	138	138	138	102	99	99	59	14	52	10	50	57	--	114	1.0
MATURITY CHECK	TX2752xTX2783	153	118	141	136	137	94	106	102	55	14	52	10	50	53	--	107	1.0
PIONEER	84G62	162	134	--	148	--	100	120	--	53	13	52	10	53	53	--	110	1.0
TRIUMPH	TR 82-G	170	113	--	141	--	105	101	--	57	12	53	9	50	54	--	105	1.0
GAUCHO CHECK	DK-56(G)	170	--	--	--	--	105	--	--	--	--	53	10	52	56	--	123	1.0
DEKALB	X-758 EXP	187	--	--	--	--	115	--	--	--	--	54	10	50	53	--	110	1.0
DELANGE	DSA 144	151	--	--	--	--	93	--	--	--	--	54	10	53	55	--	104	1.0
AVERAGES		162	112	139	137	138	102	112	103	53	12	50	9	49	53	--	104	1.0
CV(%)		10	14	7	--	--	10	14	7	--	--	4	11	9	7	--	10	--
LSD(0.05)**		19	18	12	--	--	19	16	9	--	--	2	NS	NS	4	--	12	--

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

NORTHWESTERN KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, IRRIGATED

COUNTY: THOMAS

LOCATION: Northwest Research-Extension Center, Colby

TEST SITE: Keith silt loam

1998 CROP: Soybean

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 60 N 35 P₂O₅ 0 K₂O

PLANTING DATE: 5/26/99

HARVEST DATE: 10/22/99

COOPERATORS:

Patrick Evans, agronomist

TARGET POPULATION: 90,000 plants/acre,

2.3 in. spacing

STAND (% of target): 87

YIELD: Average (bu/a): 165

Range (bu/a): 133 - 206

LSD (bu/a): 11

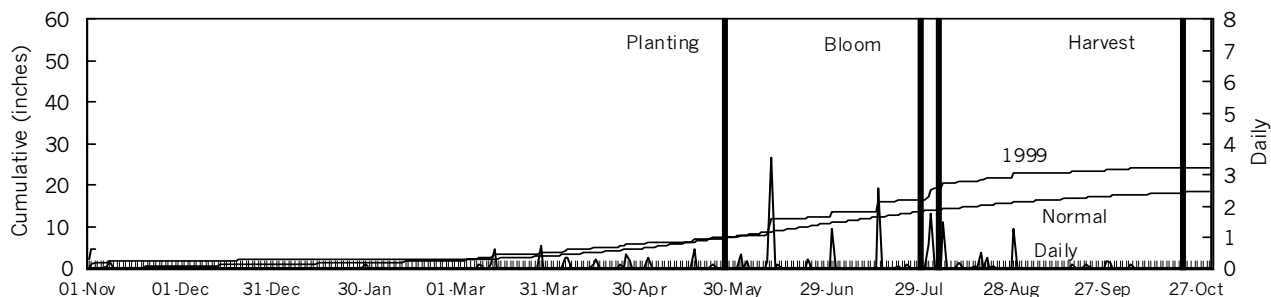
CV (%): 6

BLOOM DATES: 7/29/99 - 8/4/99

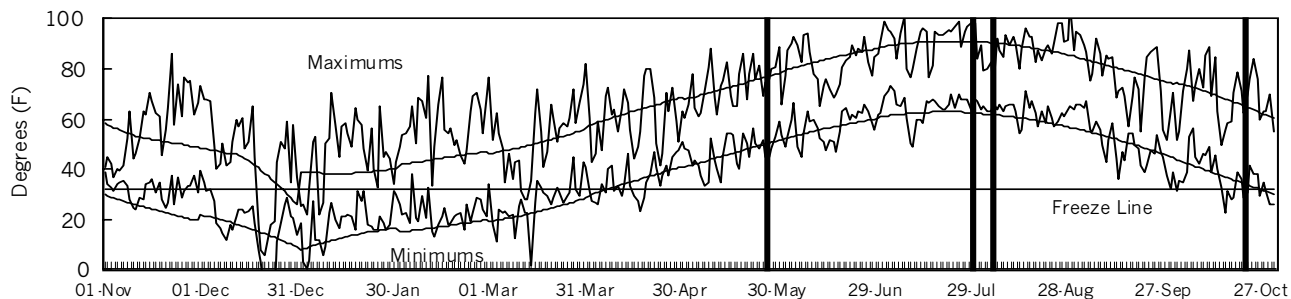
1999 GROWING CONDITIONS

Favorable conditions during establishment and growth resulted in very good yields. Diseases and insects caused little or no damage. Seed-applied insecticide provided no yield advantage for two check hybrids.

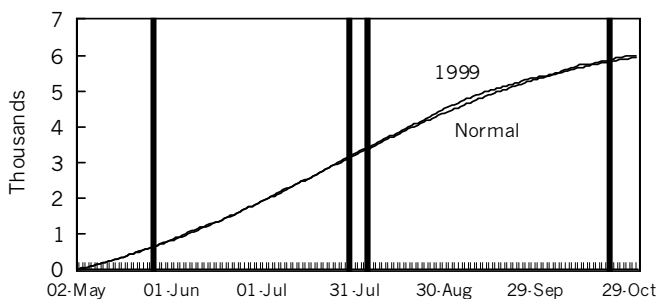
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	2.0	1.8	48	49	0	0
May	1.3	2.9	60	60	792	781
June	5.0	3.1	70	70	1072	1093
July	4.2	3.0	78	76	1378	1317
August	6.6	2.2	76	74	1303	1241
Sep.	0.8	1.5	63	65	859	928
Oct.	0.2	1.1	53	53	595	574
Season Totals	20.1	15.6	64	64	5999	5934

TABLE 19. THOMAS CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain Moist. %	Days to Blm	Grain Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
					AVG.	AVG.												
MATURITY CHECK	C 305	135	95	73	115	101	82	90	61	64	14	64	13	58	49	0	85	1.1
FRONTIER	F222E	133	--	--	--	--	81	--	--	--	--	67	14	59	49	0	87	1.0
MATURITY CHECK	TX3042xTX2737	150	117	95	133	120	91	110	79	69	14	67	14	60	55	0	85	1.1
PIONEER	8505	153	--	--	--	--	92	--	--	--	--	67	14	60	50	0	85	1.0
MATURITY CHECK	RS 610	137	91	97	114	108	83	86	81	67	14	68	13	57	53	0	71	1.1
AGRIPRO	AP 2233	152	--	--	--	--	92	--	--	--	--	68	14	59	46	0	85	1.0
GAUCHO CHECK	NK KS 560Y(N)	147	--	--	--	--	89	--	--	--	--	68	14	57	44	0	97	1.1
GAUCHO CHECK	NK KS 560Y(G)	147	--	--	--	--	89	--	--	--	--	69	13	56	44	0	92	1.1
MATURITY CHECK	OK11xTX2741	145	105	87	125	112	88	100	72	71	14	70	14	60	49	0	71	1.1
MIDLAND	XM-98105	146	--	--	--	--	88	--	--	--	--	70	15	58	48	0	72	1.1
NC+	6B50	165	--	98	--	--	100	--	82	--	--	71	14	58	52	0	95	1.1
AGRIPRO	AP 2731	171	--	--	--	--	104	--	--	--	--	71	15	57	58	0	90	1.0
DEKALB	DK-47	175	107	127	141	137	106	101	106	73	15	71	15	60	52	0	92	1.0
DEKALB	DK-54	193	118	139	156	150	117	111	116	74	15	72	14	58	59	0	89	1.0
MIDLAND	M-4757Y	170	118	--	144	--	103	111	--	72	14	72	14	58	58	0	86	1.1
ASGROW	A355	163	--	--	--	--	99	--	--	--	--	72	15	58	53	0	83	1.0
MIDLAND	M-4774	171	--	--	--	--	104	--	--	--	--	72	15	57	58	0	92	1.0
ASGROW	A459	169	123	--	146	--	103	116	--	74	14	73	14	61	57	0	98	1.0
NC+	7B47	165	--	--	--	--	100	--	--	--	--	73	15	58	53	0	86	1.0
PIONEER	84G62	179	--	--	--	--	109	--	--	--	--	73	17	59	53	0	88	1.0
CARGILL	730	159	101	132	130	131	97	95	110	75	14	74	13	57	53	0	92	1.0
ASGROW	A504	159	92	--	126	--	96	87	--	75	15	74	14	59	53	0	89	1.0
DEKALB	DK-65	196	110	--	153	--	119	104	--	75	15	74	14	57	61	0	96	0.9
GAUCHO CHECK	DK-56(N)	166	105	123	136	131	101	99	102	76	15	74	14	60	58	0	91	1.0
GAUCHO CHECK	DK-56(G)	159	--	--	--	--	96	--	--	--	--	74	14	59	58	0	84	1.0
AGRIPRO	HY 2660	163	121	126	142	137	99	115	106	74	15	74	15	60	54	0	84	1.0
DEKALB	DK-53	174	98	--	136	--	106	93	--	75	15	74	15	60	59	0	92	1.1
GAUCHO CHECK	NC+271(G)	155	--	--	--	--	94	--	--	--	--	74	15	59	55	0	83	1.0
MATURITY CHECK	TX2752xTX430	178	81	126	130	128	108	77	105	75	15	74	15	56	56	0	86	1.1
MIDLAND	M-4725	164	--	--	--	--	99	--	--	--	--	74	15	59	55	0	88	1.0
MIDLAND	M-4836	165	--	--	--	--	100	--	--	--	--	74	15	60	54	0	80	1.0
MIDLAND	XM-614	162	--	--	--	--	98	--	--	--	--	74	15	59	52	0	82	1.1
GAUCHO CHECK	NC+271(N)	161	--	--	--	--	97	--	--	--	--	75	14	59	56	0	89	1.1
MIDLAND	XM-818E	177	--	--	--	--	107	--	--	--	--	75	15	57	63	0	93	1.0
NC+	7R83	182	99	146	140	142	110	93	122	77	15	76	15	56	57	0	92	0.9
MATURITY CHECK	TX2752xTX2783	183	101	152	142	145	111	96	127	76	16	76	16	60	62	0	83	1.0
ASGROW	A571	175	92	--	134	--	106	87	--	78	15	77	15	57	56	0	97	1.0
DEKALB	X-758 EXP	166	--	--	--	--	101	--	--	--	--	77	17	57	57	0	84	1.1
NC+	8R18	206	--	--	--	--	125	--	--	--	--	80	15	56	64	0	92	1.0
ASGROW	A581	183	--	--	--	--	111	--	--	--	--	80	16	56	63	0	90	1.0
AVERAGES		165	106	120	135	130	165	106	120	73	15	73	15	58	54	0	87	1.0
CV(%)		6	10	9	--	--	6	10	9	--	--	1	3	1	2	728	7	5.5
LSD(0.05)**		11	12	13	--	--	7	12	11	--	--	1	1	1	1	NS	8	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

WEST CENTRAL KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, IRRIGATED

COUNTY: GREELEY

LOCATION: Southwest Research-Extension Center, Tribune

TEST SITE: Ulysses silt loam

1998 CROP: Sunflower

1997 CROP: Fallow

FERTILIZER (lbs/acre): 200 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/24/99

HARVEST DATE: 10/30/99

COOPERATORS:

Alan Schlegel, agronomist; Michele Sells, research associate

TARGET POPULATION: 90,000 plants/acre,
2.3 in. spacing

STAND (% of target): 69

YIELD: Average (bu/a): 116

Range (bu/a): 82 - 137

LSD (bu/a): 11

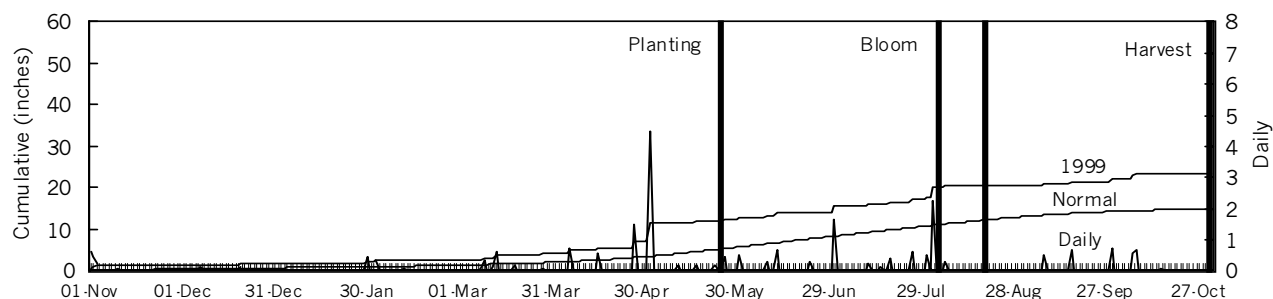
CV (%): 8

BLOOM DATES: 8/3/99 - 8/18/99

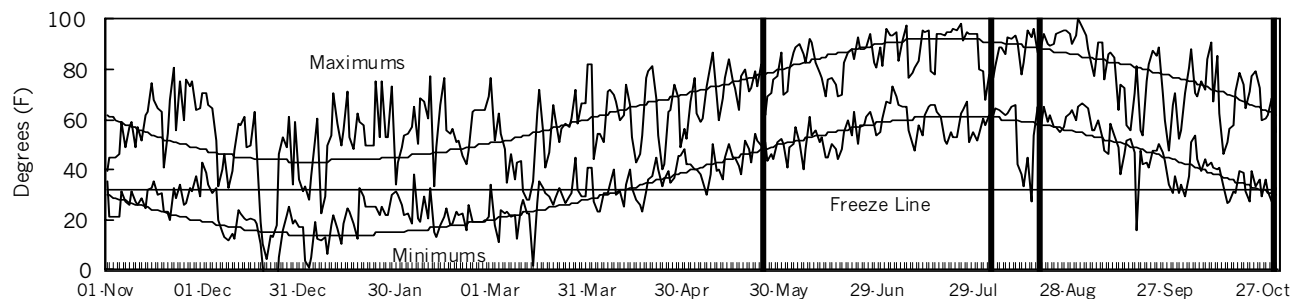
1999 GROWING CONDITIONS

Planting and early growth conditions were favorable. Fertilizer iron was applied to alleviate potential chlorosis problems. A July 1 hailstorm severely damaged the sorghum, delaying subsequent development. No insect or disease damage was observed. Seed-applied insecticide provided no yield advantage for two check hybrids.

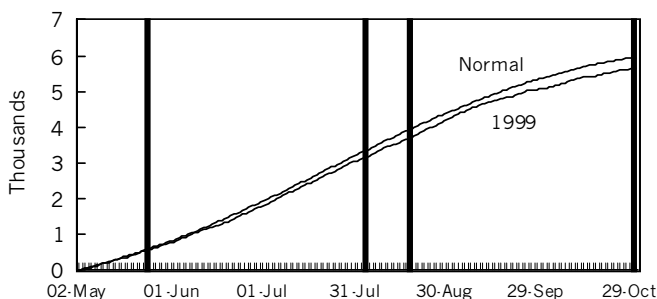
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING-SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	2.8	1.3	48	50	0	0
May	6.0	2.4	58	60	740	786
June	1.3	2.5	68	70	1015	1093
July	3.6	2.5	75	76	1275	1307
August	2.6	2.2	73	74	1212	1231
Sep.	1.9	1.3	62	65	835	944
Oct.	1.3	0.7	53	53	574	597
Season Totals	19.5	12.9	62	64	5650	5958

TABLE 20. GREELEY CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999				Final Hds		
		1999	1998	1996	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1996	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Stand %	per Plnt
		MATURITY CHECK	RS 610	85	118	82	101	95	73	77	79	70	13	69	11	58	53	--
MATURITY CHECK	TX3042xTX2737	119	151	85	135	118	103	99	82	71	13	70	11	59	51	--	--	--
MATURITY CHECK	C 305	90	124	93	107	102	77	82	90	68	12	70	11	58	47	--	--	--
PIONEER	8699	99	--	--	--	--	85	--	--	--	--	70	11	60	49	--	--	--
PIONEER	8500	93	--	--	--	--	80	--	--	--	--	70	11	60	49	--	--	--
FRONTIER	F222E	82	--	--	--	--	71	--	--	--	--	71	11	59	46	--	--	--
MIDLAND	XM-98105	107	--	--	--	--	93	--	--	--	--	73	11	58	46	--	--	--
AGRIPRO	AP 2731	114	--	--	--	--	98	--	--	--	--	74	12	59	53	--	--	--
ASGROW	A355	121	--	--	--	--	105	--	--	--	--	74	12	58	50	--	--	--
MIDLAND	XM-818E	111	--	--	--	--	96	--	--	--	--	74	12	59	59	--	--	--
MIDLAND	M-4757Y	131	143	--	137	--	113	94	--	74	14	74	12	60	54	--	--	--
DEKALB	DK-54	129	168	106	148	134	111	111	102	76	14	75	12	60	55	--	--	--
MIDLAND	M-4774	123	116	--	119	--	106	76	--	75	15	75	12	59	53	--	--	--
AGRIPRO	AP 2468	107	--	--	--	--	92	--	--	--	--	76	11	59	48	--	--	--
CARGILL	837	137	--	--	--	--	118	--	--	--	--	76	11	59	52	--	--	--
DEKALB	DK-47	130	161	102	145	131	112	106	98	76	15	76	11	59	49	--	--	--
MIDLAND	M-4836	100	154	--	127	--	87	101	--	77	14	76	11	58	50	--	--	--
ASGROW	A459	129	161	--	145	--	112	106	--	77	13	77	11	60	52	--	--	--
CARGILL	730	123	133	116	128	124	106	88	112	77	13	77	11	59	50	--	--	--
DEKALB	DK-65	130	165	--	148	--	112	109	--	78	14	77	11	58	56	--	--	--
MATURITY CHECK	OK11xTX2741	106	140	105	123	117	92	92	101	76	13	77	11	58	50	--	--	--
ASGROW	A504	123	162	--	142	--	106	107	--	78	14	77	12	58	50	--	--	--
AGRIPRO	AP 2838	124	--	--	--	--	107	--	--	--	--	78	12	59	51	--	--	--
GAUCHO CHECK	DK-56(N)	120	149	--	134	--	103	98	--	78	14	78	12	59	56	--	--	--
GAUCHO CHECK	NC+271(N)	116	--	--	--	--	100	--	--	--	--	79	11	58	54	--	--	--
DEKALB	DK-53	131	157	--	144	--	114	103	--	78	14	79	12	59	54	--	--	--
GAUCHO CHECK	DK-56(G)	114	--	--	--	--	99	--	--	--	--	79	12	59	51	--	--	--
ASGROW	A571	118	165	--	142	--	102	109	--	81	15	80	11	56	52	--	--	--
CARGILL	833	128	--	--	--	--	111	--	--	--	--	80	11	57	50	--	--	--
GAUCHO CHECK	NC+271(G)	118	--	--	--	--	102	--	--	--	--	80	11	57	53	--	--	--
MIDLAND	M-4725	121	159	--	140	--	104	105	--	80	14	80	11	57	54	--	--	--
MIDLAND	XM-614	116	--	--	--	--	100	--	--	--	--	81	11	58	51	--	--	--
MATURITY CHECK	TX2752xTX430	131	175	120	153	142	113	115	115	80	14	82	11	58	50	--	--	--
DEKALB	X-758 EXP	113	--	--	--	--	98	--	--	--	--	83	11	56	51	--	--	--
MATURITY CHECK	TX2752xTX2783	110	184	113	147	136	95	121	109	82	14	84	11	58	54	--	--	--
ASGROW	A581	116	--	--	--	--	101	--	--	--	--	86	11	55	57	--	--	--
AVERAGES		116	152	104	134	124	116	152	104	77	14	77	11	58	52	--	--	--
CV(%)		8	6	12	--	--	8	6	12	--	--	2	1	1	5	--	--	--
LSD(0.05)**		11	12	15	--	--	9	8	14	--	--	2	0	1	3	--	--	--

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

SOUTHWESTERN KANSAS GRAIN SORGHUM TEST ON SILT LOAM SOIL, IRRIGATED

COUNTY: FINNEY

LOCATION: Southwest Research-Extension Center, Garden City

TEST SITE: Keith silt loam

1998 CROP: Fallow

1997 CROP: Sorghum

FERTILIZER (lbs/acre): 150 N 0 P₂O₅ 0 K₂O

PLANTING DATE: 5/24/99

HARVEST DATE: 10/14/99

COOPERATORS:

Merle Witt, agronomist

TARGET POPULATION: 90,000 plants/acre,
2.3 in. spacing

STAND (% of target): 90

YIELD: Average (bu/a): 106

Range (bu/a): 75 - 124

LSD (bu/a): 11

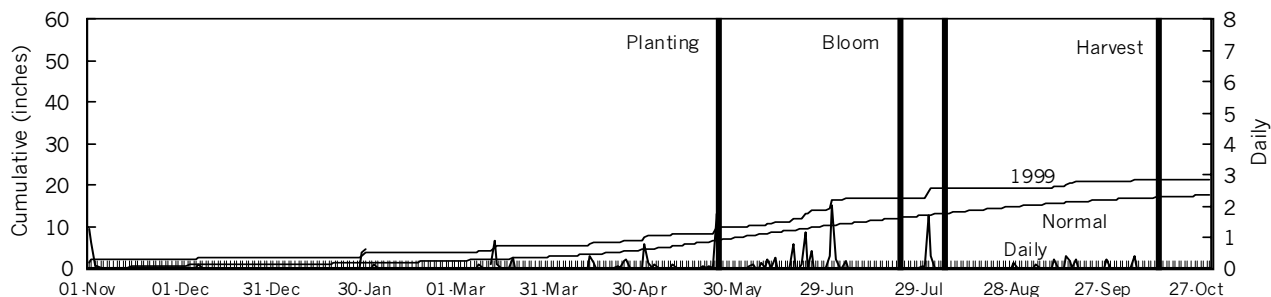
CV (%): 7

BLOOM DATES: 7/22/99 - 8/6/99

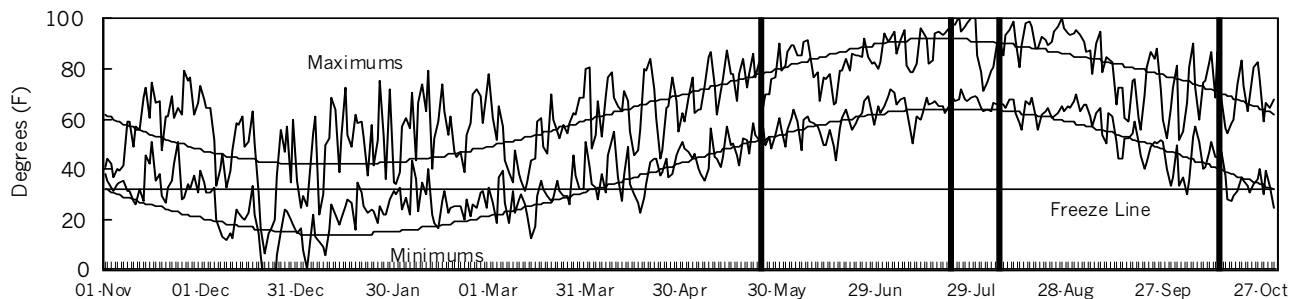
1999 GROWING CONDITIONS

Favorable planting and growing conditions enabled the test to get off to a good start. A July 1 hailstorm damaged the test slightly, causing primarily cosmetic damage. No disease or insect damage was noted. Seed-applied insecticide caused no significant yield advantage for two check hybrids.

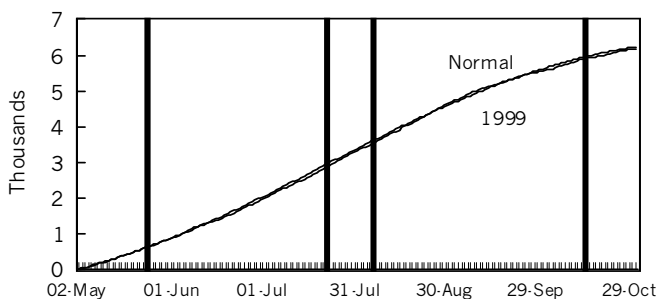
PRECIPITATION



DAILY TEMPERATURES



GROWING DEGREE DAYS



GROWING SEASON WEATHER SUMMARY

Month	Precipitation		Average Temp.		GDD	
	1999	Normal	1999	Normal	1999	Normal
April	1.3	1.7	51	51	0	0
May	3.2	2.9	62	62	839	842
June	4.2	2.9	70	72	1075	1145
July	2.7	2.5	79	78	1389	1352
August	2.4	2.2	77	75	1341	1275
Sep.	1.7	1.6	64	67	906	986
Oct.	0.4	1.0	55	54	637	632
Season Totals	15.9	14.8	65	66	6185	6231

TABLE 21. FINNEY CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr.	3-Yr.	1999	1998	1997	Days to Blm	Grain to Moist. %	Days to Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand per %	Hds per Plnt
					AVG.	AVG.												
MATURITY CHECK	C 305	79	98	97	88	91	75	83	90	54	13	59	13	59	49	--	74	1.1
GARST	5515	91	--	--	--	--	87	--	--	--	--	63	13	60	50	--	93	0.9
MATURITY CHECK	RS 610	75	85	86	80	82	72	72	79	58	13	63	13	59	51	--	88	1.0
MATURITY CHECK	TX3042xTX2737	90	101	88	95	93	86	86	81	60	13	63	13	60	54	--	101	0.9
PIONEER	8505	104	--	--	--	--	98	--	--	--	--	65	14	60	48	--	77	1.1
ASGROW	A504	106	98	--	102	--	100	83	--	67	13	66	13	59	49	--	108	0.8
GAUCHO CHECK	NK KS 560Y(G)	107	--	--	--	--	102	--	--	--	--	66	13	60	44	--	93	1.0
GAUCHO CHECK	NK KS 560Y(N)	109	--	--	--	--	103	--	--	--	--	67	13	60	46	--	96	1.0
DEKALB	DK-47	102	132	116	117	116	97	112	107	64	14	67	14	60	49	--	101	1.0
NC+	6B50	101	--	--	--	--	96	--	--	--	--	67	14	60	48	--	94	0.9
ASGROW	A459	99	133	--	116	--	94	113	--	65	13	68	13	60	54	--	108	0.7
ASGROW	A355	103	--	--	--	--	97	--	--	--	--	68	14	60	49	--	72	1.0
DEKALB	DK-54	120	119	115	120	118	114	101	106	67	14	68	14	60	57	--	79	1.0
GARST	5429	105	130	--	117	--	99	110	--	64	14	68	14	60	55	--	101	0.8
MYCOGEN	1506	124	126	127	125	126	117	107	117	63	14	68	14	59	57	--	91	0.8
AGRIPRO	AP 2838	105	116	113	111	111	100	99	104	65	13	69	13	60	51	--	84	0.9
MATURITY CHECK	OK11xTX2741	89	117	87	103	98	85	99	81	65	13	69	13	60	49	--	73	1.0
TAN PLANT	ATX631xR9019	98	120	--	109	--	93	102	--	64	13	69	13	60	58	--	92	0.8
AGRIPRO	HY 2660	94	106	102	100	101	89	90	95	66	14	69	14	60	49	--	86	0.8
AGRIPRO	AP 2731	115	--	--	--	--	109	--	--	--	--	69	14	60	55	--	94	0.9
DEKALB	DK-65	113	134	--	123	--	107	114	--	67	14	69	14	60	56	--	93	0.8
GARST	5440	85	--	--	--	--	80	--	--	--	--	69	14	61	51	--	81	1.0
GAUCHO CHECK	NC+271(N)	97	--	--	--	--	92	--	--	--	--	69	14	60	54	--	107	0.8
MIDLAND	M-4774	100	--	--	--	--	95	--	--	--	--	69	14	60	55	--	89	0.9
MIDLAND	M-4836	103	112	--	107	--	98	95	--	65	14	69	14	60	51	--	89	1.0
MYCOGEN	3694	116	122	--	119	--	110	104	--	64	14	69	14	60	51	--	99	1.0
NC+	7B47	115	--	--	--	--	109	--	--	--	--	69	14	59	50	--	98	0.8
WARNER	W-818-E	96	123	--	110	--	91	104	--	65	14	69	14	60	58	--	95	0.8
WARNER	W-965-E	101	119	--	110	--	96	101	--	66	14	69	14	60	49	--	87	1.0
MIDLAND	M-4725	100	--	--	--	--	95	--	--	--	--	70	13	60	55	--	92	1.0
MYCOGEN	EXP X9890	108	--	--	--	--	102	--	--	--	--	70	13	60	51	--	103	0.8
DEKALB	DK-53	119	137	--	128	--	113	117	--	65	14	70	14	60	54	--	79	0.9
GAUCHO CHECK	DK-56(G)	104	--	--	--	--	99	--	--	--	--	70	14	61	56	--	84	0.9
GAUCHO CHECK	DK-56(N)	105	117	124	111	115	99	99	115	68	14	70	14	60	54	--	90	0.9
MYCOGEN	444E	112	131	98	122	114	106	112	91	66	14	70	14	60	53	--	86	1.0
MYCOGEN	3700	117	--	--	--	--	111	--	--	--	--	70	14	60	54	--	105	0.8
NK	K73-J6	118	119	121	119	119	112	102	112	66	14	70	15	60	53	--	76	1.0
GAUCHO CHECK	NC+271(G)	100	--	--	--	--	95	--	--	--	--	71	13	60	55	--	92	0.9
MYCOGEN	3696	107	--	--	--	--	101	--	--	--	--	71	13	59	49	--	77	1.0
MATURITY CHECK	TX2752xTX430	123	130	114	127	122	117	111	105	67	14	71	14	59	51	--	94	0.9
NC+	7R83	123	121	116	122	120	116	103	107	70	14	71	14	59	54	--	90	0.9

(continued)

TABLE 21. FINNEY CO. IRR. GRAIN SORGHUM PERFORMANCE TEST RESULTS, 1997-1999.

BRAND	NAME	ACRE YIELD, BUSHEL					YIELD AS % OF TEST AVERAGE			98-99		1999						
		1999	1998	1997	2-Yr. AVG.	3-Yr. AVG.	1999	1998	1997	Days Blm	Grain to Moist. %	Days Blm	Grain to Moist. %	Test Wt. lb/bu	Plnt Ht. in.	Ldg %	Final Stand %	Hds per Plnt
PIONEER	84G62	102	--	--	--	--	97	--	--	--	--	71	14	60	49	--	96	0.8
TAN PLANT	ATX635xTX436	117	104	130	111	117	111	89	120	70	14	71	14	61	63	--	77	0.9
TRIUMPH	TR 481	99	--	113	--	--	94	--	104	--	--	71	14	60	56	--	88	0.9
ASGROW	A571	113	122	--	118	--	108	104	--	70	14	72	14	59	54	--	99	0.9
MATURITY CHECK	TX2752xTX2783	111	122	89	117	107	106	104	82	69	14	72	14	60	55	--	85	0.9
MIDLAND	M-4757Y	110	110	--	110	--	104	94	--	66	14	72	14	60	55	--	100	0.8
TRIUMPH	TR 82-G	107	130	117	119	118	102	111	108	70	14	72	14	61	56	--	87	0.9
DEKALB	X-758 EXP	115	--	--	--	--	109	--	--	--	--	72	15	60	51	--	86	0.8
TAN PLANT	ATX631xTX436	104	109	116	106	110	99	92	107	69	14	73	14	60	59	--	67	1.0
ASGROW	A581	121	--	--	--	--	115	--	--	--	--	74	14	59	56	--	106	0.8
AVERAGES		105	118	108	112	110	105	118	108	66	14	69	14	60	53	--	90	0.9
CV(%)		7	9	9	--	--	7	9	9	--	--	2	4	1	3	--	11	9.7
LSD(0.05)**		11	14	13	--	--	10	12	12	--	--	2	1	0	2	--	13	0.1

** Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

TABLE 22. KANSAS IRRIGATED GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹						1997-1999		
		RPI	STI	THI	GRI	FNI	AVG.	DYA (bu/a) ²	SE ³	N ⁴
DEKALB	DK-54	105	117	117	111	114	113	28 *	2	12
DEKALB	DK-53	108	109	106	114	113	110	25 *	3	9
MYCOGEN	1506	107	110	--	--	117	--	25 *	4	7
DEKALB	DK-65	110	98	119	112	107	109	23 *	5	9
NC+	7R83	--	103	110	--	116	--	22 *	4	10
DEKALB	DK-47	106	106	106	112	97	105	21 *	2	12
c MATURITY CHECK	TX2752xTX430	106	113	108	113	117	111	21 *	4	12
ASGROW	A571	115	97	106	102	108	105	20 *	4	9
MATURITY CHECK	TX2752xTX2783	102	94	111	95	106	102	19 *	5	12
AGRIPRO	AP 2838	106	100	--	107	100	--	18 *	3	8
MIDLAND	M-4757Y	107	101	103	113	104	106	18 *	3	9
ASGROW	A459	96	99	103	112	94	101	17 *	4	9
CARGILL	730	--	106	97	106	--	--	16 *	5	8
GAUCHO CHECK	DK-56(N)	96	102	101	103	99	100	14 *	2	12
AGRIPRO	HY 2660	--	--	99	--	89	--	13	6	6
MIDLAND	M-4725	89	--	99	104	95	--	13 *	3	6
MIDLAND	M-4836	106	96	100	87	98	97	12 *	4	8
ASGROW	A504	106	95	96	106	100	101	10 *	4	9
MIDLAND	M-4774	--	94	104	106	95	--	5	7	6
MATURITY CHECK	TX3042xTX2737	99	89	91	103	86	93	2	4	12
MATURITY CHECK	OK11xTX2741	82	87	88	92	85	87	-1	3	12
c MATURITY CHECK	C 305	81	82	82	77	75	79	-10 *	3	12
c MATURITY CHECK	RS 610	84	96	83	73	72	82	-11 *	2	12
AGRIPRO	AP 2233	--	--	92	--	--	--	--	--	--
AGRIPRO	AP 2468	--	--	--	92	--	--	--	--	--
AGRIPRO	AP 2731	109	107	104	98	109	106	--	--	--
ASGROW	A355	89	91	99	105	97	96	--	--	--
ASGROW	A581	--	104	111	101	115	--	--	--	--
CARGILL	737	--	108	--	--	--	--	--	--	--
CARGILL	770Y	--	101	--	--	--	--	--	--	--
CARGILL	833	--	--	--	111	--	--	--	--	--
CARGILL	837	--	--	--	118	--	--	--	--	--
DEKALB	X-758 EXP	112	115	101	98	109	107	--	--	--
DELANGE	DSA 133	--	102	--	--	--	--	--	--	--
DELANGE	DSA 144	--	93	--	--	--	--	--	--	--
FRONTIER	F222E	--	--	81	71	--	--	--	--	--
FRONTIER	F557E	104	--	--	--	--	--	--	--	--
GARST	5429	--	--	--	--	99	--	--	--	--
GARST	5440	--	--	--	--	80	--	--	--	--
GARST	5515	--	--	--	--	87	--	--	--	--
GAUCHO CHECK	DK-56(G)	107	105	96	99	99	101	--	--	--
GAUCHO CHECK	NC+271(G)	95	94	94	102	95	96	--	--	--
GAUCHO CHECK	NC+271(N)	93	98	97	100	92	96	--	--	--

(continued)

TABLE 22. KANSAS IRRIGATED GRAIN SORGHUM TEST YIELD SUMMARY, 1997-1999.

BRAND	NAME	1999 YIELD AS % OF TEST AVERAGE ¹						1997-1999		
		RPI	STI	THI	GRI	FNI	AVG.	DYA (bu/a) ²	SE ³	N ⁴
GAUCHO CHECK	NK KS 560Y(G)	--	--	89	--	102	--	--	--	--
GAUCHO CHECK	NK KS 560Y(N)	--	--	89	--	103	--	--	--	--
MIDLAND	M-4664	--	90	--	--	--	--	--	--	--
MIDLAND	XM-614	87	--	98	100	--	--	--	--	--
MIDLAND	XM-818E	104	--	107	96	--	--	--	--	--
MIDLAND	XM-98105	106	--	88	93	--	--	--	--	--
MYCOGEN	3694	97	103	--	--	110	--	--	--	--
MYCOGEN	3696	97	84	--	--	101	--	--	--	--
MYCOGEN	3700	108	104	--	--	111	--	--	--	--
MYCOGEN	444E	--	--	--	--	106	--	--	--	--
MYCOGEN	EXP X9890	--	--	--	--	102	--	--	--	--
NC+	6B50	--	--	100	--	96	--	--	--	--
NC+	7B47	--	95	100	--	109	--	--	--	--
NC+	8R18	--	--	125	--	--	--	--	--	--
NK	K73-J6	--	--	--	--	112	--	--	--	--
PIONEER	83G66	--	118	--	--	--	--	--	--	--
PIONEER	84G62	113	100	109	--	97	--	--	--	--
PIONEER	8500	--	--	--	80	--	--	--	--	--
PIONEER	8505	84	--	92	--	98	--	--	--	--
PIONEER	8699	--	--	--	85	--	--	--	--	--
TAN PLANT	ATX631xR9019	--	--	--	--	93	--	--	--	--
TAN PLANT	ATX631xTX436	--	--	--	--	99	--	--	--	--
TAN PLANT	ATX635xTX436	--	--	--	--	111	--	--	--	--
TRIUMPH	TR 481	--	--	--	--	94	--	--	--	--
TRIUMPH	TR 82-G	--	105	--	--	102	--	--	--	--
U.A.P.	UAP-751B	90	97	--	--	--	--	--	--	--
U.A.P.	UAP-760C	91	89	--	--	--	--	--	--	--
WARNER	W-818-E	--	--	--	--	91	--	--	--	--
WARNER	W-965-E	--	--	--	--	96	--	--	--	--
AVERAGES		161	162	165	116	105	142	--	--	--
CV(%)		3	10	6	8	7	--	--	--	--
LSD(0.05)**		4	19	7	9	10	--	--	--	--

¹ RPI = Republic Co. Test, Irrigation Experiment Field, Scandia STI = Stafford Co. Test, Sandyland Experiment Field, St. John
 THI = Thomas Co. Test, Northwest Res. Ext. Center, Colb GRI = Greeley Co. Test, Southwest Rex. Ext. Center, Tribune
 FII = Finney Co. Test, Southwest Rex. Ext. Center, Garden City

² DYA = Differential Yielding Ability; average difference of hybrid yield compared to average of check hybrids in bushels per acre.

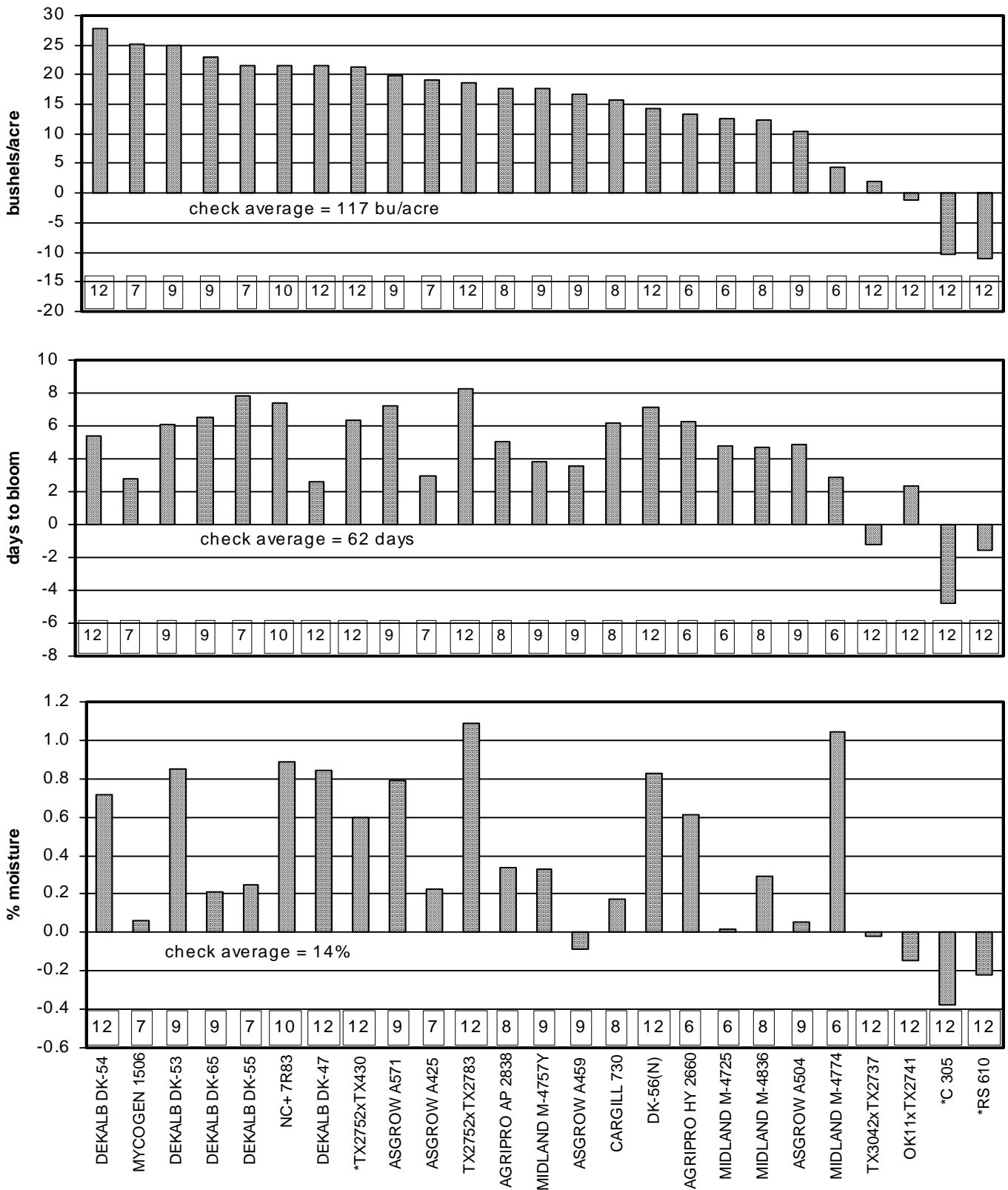
³ SE = Standard Error of DYA; measure of consistency of yield differences.

⁴ N = Number of tests where hybrid was compared with checks; DYA was calculated only for those with at least 6 comparisons.

^c Check hybrid; yield of each hybrid was compared to the average yield of these check hybrids.

* Statistically significantly different from the average of the check hybrids, which = 0 (P < 0.5).

FIGURE 10. KANSAS IRRIGATED SORGHUM HYBRID PERFORMANCE SUMMARY, 1997-1999.



Bars show differences between hybrid and average of check hybrids*. Values in boxes are numbers of tests where hybrids and checks were compared.

APPENDIX 1: Entrants in the 1999 Kansas Sorghum Performance Tests

AgriPro

AgriPro Seeds, Inc.
Front St.
P.O. Box 2212
Hereford, TX 79045
800-858-4603

Garst

Jeff Schaef
Garst Seed Co.
219 E. Garfield
Greensburg, KS 67054
316-723-2454

Mycogen

A. James Allison
Mycogen Seeds
3600 N. Columbia
Plainview, TX 79072
806-995-1322

U.A.P.

John Hartman
Pueblo - U.A.P.
P.O. Box 1279
2502 John St.
Garden City, KS 67846
316-275-6127

Asgrow

Matt Sowder
Asgrow Seed Co.
Halstead, KS 67056
888-827-4769

Golden World

Tony Davis
Crosbyton Seed
P.O. Box 429
Crosbyton, TX 79322
806-675-7351

NC+

Wes Zart
NC+ Hybrids
P.O. Box 4408
1300 N. 79th
Lincoln, NE 68504
402-467-2517

Valley Premium

Danny Linnebur
Valley Feed & Seed Inc.
1903 S. Meridian
Wichita, KS 67213
316-942-2278

Cargill

Kevin Hannigan
Cargill Hybrid Seeds
P.O. Box 5645
Minneapolis, MN 55440-5645
612-742-6727

Hoegemeyer

Don Moeller
Hoegemeyer Hybrids
1755 Hoegemeyer Rd.
Hooper, NE 68031-2125
402-654-3399

NK

Marcus Schwartz
Novartis Seeds, Inc.
1060 Wheatland Dr.
Buhler, KS 67522
316-543-2707

Warner

Bill Lyles
George Warner Seed
Box 1877
Hereford, TX 79045
806-364-4470

DeKalb

Charles Courtney
Monsanto
R.R. 2, Box 56
Lubbock, TX 79415
806-763-3336

Hyttest

Jim Kurzanski
Agribiotech, Inc.
120 Corporate Park Drive
Henderson, NV 89014
(702) 566-2440

Pioneer

Brad Lance
Pioneer Hi-Bred Intl., Inc.
1616 S. Kentucky St.
Suite C-150
Amarillo, TX 79102
806-356-0160

DeLange

Steve Ahring
DeLange Seed (AGSECO)
P.O. Box 7
Girard, KS 66743
316-724-6223

Midland

Ron Sylvester
Midland Seeds, Inc.
1906 Kingman Rd.
Ottawa, KS 66067
800-819-SEED

Terra

Matt Fox
Terra International, Inc.
PO Box 6000
Sioux City, IA 51106
712-277-1340

Frontier

Billy McClenney
Frontier Hybrids
P.O. Box 177
Abernathy, TX 79311
806-298-2595

Midwest Seed

Mark Gruhn
Midwest Seed Genetics
P.O. Box 518
Carroll, IA 51401
800-369-8218

Triumph

Ben Benton
Triumph Seed Co. Inc.
P.O. Box 1050
Ralls, TX 79357
806-253-2584

APPENDIX 2: Entries in the 1999 Kansas Grain Sorghum Performance Tests

AVERAGES	Grain	End.	Mat.	Days	G-bug*	FRONTIER	Grain	End.	Mat.	Days	G-bug*
	-	-	-	-	-	F222E	R	Y	E	52	E
CV(%)	Grain	End.	Mat.	Days	G-bug*	F270E	B	Y	E	54	E
	-	-	-	-	-	F557E	R	Y	M	64	E
LSD(0.05)**	Grain	End.	Mat.	Days	G-bug*	GARST	Grain	End.	Mat.	Days	G-bug*
	-	-	-	-	-	5631Y	C	HY	E	62	E
AGRIPRO	Grain	End.	Mat.	Days	G-bug*	5664	B	Y	E	62	C
AP 2233	B	HY	E	60	CE	5616	R	HY	M	66	-
AP 2468	B	HY	ME	64	C	5429	B	HY	M	68	C
HY 2660	R	W	M	68	CE	5515	R	HY	M	68	-
AP 2731	B	HY	M	69	C	5440	R	W	ML	70	CE
AP 2838	R	W	M	71	CE	GAUCHO CHECK	Grain	End.	Mat.	Days	G-bug*
ASGROW	Grain	End.	Mat.	Days	G-bug*	NC+271(G)	-	-	-	-	-
A201	B	W	E	55	C	NC+271(N)	-	-	-	-	-
A355	B	HY	ME	62	-	NK KS 560Y(G)	-	-	-	-	-
SENECA	B	HY	ME	64	C	NK KS 560Y(N)	-	-	-	-	-
A459	R	W	M	68	E	DK-56(G)	B	HY	L	76	CE
A504	C	HY	M	68	-	DK-56(N)	B	HY	L	76	CE
A571	B	HY	ML	71	-	GOLDEN WORLD	Grain	End.	Mat.	Days	G-bug*
A581	R	W	ML	75	-	GW 5972	R	W	ME	62	E
CARGILL	Grain	End.	Mat.	Days	G-bug*	GW 1489	R	W	ML	68	E
576	B	HY	E	61	CEIK	HOEGEMEYER	Grain	End.	Mat.	Days	G-bug*
647	B	HY	M	68	C	6055	B	Y	E	62	-
697	B	HY	M	68	CEIK	6766	R	Y	M	67	E
627	B	HY	M	69	CEIK	6712	C	Y	L	70	C
730	B	HY	M	70	CEIK	6874	R	Y	L	70	E
737	B	HY	M	70	C	6884	R	Y	L	72	E
770Y	C	Y	M	70	CEIK	HYTEST	Grain	End.	Mat.	Days	G-bug*
833	B	HY	L	71	-	HTG629	B	-	ME	60	CE
837	B	HY	L	73	-	HTG660	B	-	ME	62	C
DEKALB	Grain	End.	Mat.	Days	G-bug*	HTG747	R	-	M	69	-
DK-35	B	HY	E	67	CE	HTG760	B	-	M	70	CE
DK-43A	B	HY	E	70	CE	MIDLAND	Grain	End.	Mat.	Days	G-bug*
DK-44	B	HY	M	71	CE	M-4664	B	R	ME	60	O
DK-45	B	HY	M	72	CE	M-4725	C	R	M	64	O
DK-47	B	HY	M	72	CE	M-4757Y	Y	Y	M	64	O
DK-65	B	HY	L	73	-	M-4774	B	R	M	65	O
DK-53	B	HY	L	74	CE	XM-98105	B	HY	M	65	C
X-758 EXP	B	HY	L	74	CE	M-4836	R	R	ML	68	E
DK-54	B	HY	L	75	CE	XM-614	B	HY	ML	68	CF
DELANGE	Grain	End.	Mat.	Days	G-bug*	M-4876	R	R	L	69	O
DSA 115C	C	HY	ME	59	CE	XM-818E	B	HY	ML	70	CF
DSA 133	B	HY	M	65	E						
DSA 123Y	Y	Y	ML	68	EI						
DSA 144	B	HY	ML	68	E						

*Grain = Grain color: Bronze, Cream, Red, Yellow, White; End. = Endosperm color: White, Yellow, Hetero-Yellow; Mat. = Relative maturity: Early, Medium, Late; Days = Days to half bloom; G-bug = Greenbug biotype resistance: Resistant, Susceptible, biotype E, biotype I. Blank spaces indicate that the information was not provided. Most information was provided by entrants.

(continued)

APPENDIX 2: Entries in the 1999 Kansas Grain Sorghum Performance Tests

MIDWEST SEED						TRIUMPH					
Grain	End.	Mat.	Days	G-bug*		Grain	End.	Mat.	Days	G-bug*	
G 530	C	HY	ME	63	CE	TR 438	B	W	E	60	CE
256	B	Y	M	68	CE	TR 432	B	W	E	62	CE
G 571	B	Y	M	68	C	TR 461	R	W	ME	62	CE
MYCOGEN						U.A.P.					
Grain	End.	Mat.	Days	G-bug*		Grain	End.	Mat.	Days	G-bug*	
M3838	C	HY	M	60	CE	TR 447	C	W	ME	63	CE
1506	C	HY	M	62	CE	TR 459	B	W	ME	64	CE
3696	Y	Y	M	65	CEIK	TR 462	R	W	M	70	CE
EXP X9881	Y	Y	M	65	CEIK	TR 65-G	R	W	M	70	CE
EXP X9890	B	HY	ML	67	CEIK	TR 464	B	W	M	71	CE
3694	B	HY	ML	68	CE	TR 481	R	W	ML	72	CE
3700	R	W	ML	68	CE	TR 82-G	R	W	ML	73	CE
444E	B	HY	ML	68	CE	U.A.P.					
NC+						Grain End. Mat. Days G-bug*					
Grain	End.	Mat.	Days	G-bug*		UAP-730B	B	HY	E	60	C,E
5B74E	B	HY	E	60	CE	UAP-731B	R	W	E	60	C,E
6B50	B	HY	ME	62	-	UAP-740C	C	HY	ME	61	C
6R30	R	W	ME	63	-	UAP-732B	R	W	ME	63	C,E
Y363	Y	Y	ME	64	C	UAP-751B	B	HY	M	64	C
6B70	B	HY	M	65	C	UAP-760C	C	HY	M	65	C
6C69	C	HY	M	67	CE	VALLEY PREMIUM					
7B29	B	HY	M	69	-	Grain End. Mat. Days G-bug*					
7B47	B	HY	M	70	CE	V.P. 530	R	W	ME	75	CEI
7R83	R	W	ML	70	-	V.P. 700	W	W	M	80	CEI
8R18	R	W	L	75	-	V.P. 850	B	W	ML	85	CEI
NK						WARNER					
Grain	End.	Mat.	Days	G-bug*		Grain	End.	Mat.	Days	G-bug*	
KS 310	B	HY	E	65	E	W-625-Y	Y	Y	M	65	C
K59-Y2	C	HY	M	67	E	W-965-E	R	HY	M	68	CE
KS 585	B	HY	M	67	E	W-818-E	B	HY	ML	70	CE
KS 711Y	C	HY	M	70	E	TAN PLANT					
K73-J6	B	HY	M	71	E	Grain End. Mat. Days G-bug*					
PIONEER						MATURITY CHECK					
Grain	End.	Mat.	Days	G-bug*		Grain	End.	Mat.	Days	G-bug*	
87G57	B	Y	E	63	CE	C 305	R	-	E	60	-
8699	B	Y	E	65	CE	TX3042xTX2737	B	W	E	65	-
8500	R	W	M	68	-	RS 610	R	W	M	68	-
8505	R	W	M	68	CE	OK11xTX2741	W	W	M	69	-
8414	R	W	M	69	CE	TX2752xTX430	B	W	L	73	-
83G66	R	W	L	72	CE	TX2752xTX2783	R	W	L	74	E
84G62	B	Y	L	72	CE	TERRA					
82G63	B	Y	L	73	-	Grain End. Mat. Days G-bug*					
TR2	-	-	-	-	-	TR2	-	-	-	-	-
TR303	-	-	-	-	-	TR303	-	-	-	-	-
TR440	-	-	-	-	-	TR440	-	-	-	-	-

*Grain = Grain color: Bronze, Cream, Red, Yellow, White; End. = Endosperm color: White, Yellow, Hetero-Yellow; Mat. = Relative maturity: Early, Medium, Late; Days = Days to half bloom; G-bug = Greenbug biotype resistance: Resistant, Susceptible, biotype E, biotype I. Blank spaces indicate that the information was not provided. Most information was provided by entrants.

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