KANSAS STATE UNIVERSITY

Ag Student

FEBRUARY 1960

HE MAKES HIS ENGINE STALL

...so yours won't!

Charles Domke has one of the world's most unusual jobs. He *tries* to have engine trouble!

He's a Project Automotive Engineer at Standard Oil. In all kinds of weather—hot, cold, wet, dry, low barometer, high barometer—he goes driving. First thing you know, he'll stop and change fuel, put in a different blend of gasoline to see what happens. If it stalls, he doesn't call a tow truck. He just puts in another blend of gasoline.

You might say he *makes* his engine stall... so yours won't!

What Mr. Domke and other automotive engineers learn from these constant experiments is used to give you gasoline that is blended especially for the region of the country in which you live and also for the season.

It may surprise you to learn that *12 or more seasonal changes* are made in Standard gasoline every year! It is adjusted for temperature, humidity, altitude and other factors that affect gasoline performance in your area.

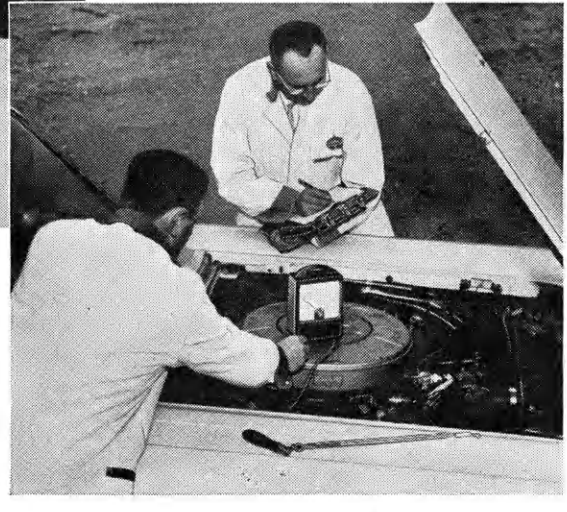
A pioneer in petroleum research, Standard Oil is famous for its "firsts" in petroleum progress. Since our first research laboratory opened 70 years ago, our scientists have been responsible for many major petroleum advances—from making a barrel of oil yield more gasoline to discovering a way to get more oil out of the earth.

Charles Domke and other scientists at Standard Oil and its affiliated companies are searching continually for ways to make oil products serve you better... to make petroleum *more useful to more people than ever before!*

What makes a company a good citizen?

For a company, good citizenship is more than obeying the law and paying taxes. It is looking ahead, planning for the future, making improvements. America has grown to greatness on research conducted by private business for the benefit of all.

Charles Domke (right) is one of the few men we know who takes a positive delight in having his engine stall in sub-zero weather. He and Mechanic Verland Stout change gasoline blends frequently. When the engine stalls, they try another blend. Their objective, of course, is to find the perfect gasoline under various climatic and road conditions—and the true test is on the road itself!



The gasoline that performs best in icy conditions will cause engine difficulty in hot weather. Standard gasoline formulas are changed twelve times a year to assure peak performance in every season. Mixtures also differ from one geographical location to another in order to offer customers more gasoline value for their dollar.

STANDARD OIL COMPANY

STANDARD

THE SIGN OF PROGRESS...
THROUGH RESEARCH

Kansas State University

AG STUDENT

Vol. XXXVI February 1960 No. 3

In This Issue

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Staff

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Prof. George Filinger examines some old-time firearms from his large collection.

Professor Collects Firearms

by David Newton

Gun collecting is a hobby that has just recently come to the country's attention. George A. Filinger, horticulture professor, has probably the most complete collection of firearms in this area.

Professor Filinger has collected nearly 100 guns in the last 15 years. His favorites are the real old-timers, muzzle-loaders and flintlocks. He is very proud to own several guns that were made during the early 19th century.

Included in Professor Filinger's collection are some very unusual weapons. Most of them represent new ideas and inventions that were not perfected and so resulted in a very strange looking weapon. Some are among the first guns to be fired by percussion. Also he has quite a few of the accessories needed for the old guns, such as slugs, powder, and caps.

This hobby has led him into fields other than the mere collecting of guns. He has built up an interesting library on the history and development of different weapons. He has just as much interest in the gun's history as in the gun itself.

The Editor Says...

FEBRUARY—ACCORDING TO Webster—is the month of expiation or the month for undoing the wrong. Quite fitting, I think, for Washington's and Lincoln's birthdays. What other two men have tried harder or done more to undo the things they felt were wrong?

THE NEW YEAR brings new ideas and new methods for agricultural production. The American Petroleum Institute states that in the future moisture may be conserved and "dust bowl" conditions lessened by a covering for fields made from asphalt. Seed beds would be covered with an asphalt film lasting about five or six weeks, or about long enough for the seed to germinate and emerge.

WHERE DO COUNTY agents get their new ideas? An Ohio State university study gives the following sources:

Extension specialists	39%
Experiment station bulletins	27%
Farm magazines	14%
Direct personal contact	9%
Key farmers	7%
Extension news releases	4%

These percentages are of county agents who considered each category the most important single source of material.

ACCORDING TO AN article by Roger W. Strohbehn and John F. Timmons in *Iowa Farm Science* the old saying "marriage is the best way to get a farm" is about half correct. In a survey of Iowa farm-owners 49 percent acquired their land within their families.

FEEDING TRIALS at Oregon State college show that steers gain faster on pellets or wafers but gains may be offset by the increased cost of processing. Your decision depends on local conditions and prices.

	Average daily gain	Average feed cost per pound gain
Wafer	2.72	18c
Pellet	2.78	20c
Chopped hay and corn	2.55	16c

OREGON STATE COLLEGE entomologists have started "planting" alkali bees. W. P. Stephen, entomologist at OSC, states that alfalfa seed yields can be tripled.

Alkali bees do not live in a hive. After gathering pollen they dig a hole 6"-10" deep, deposit a pollen ball, and lay an egg on top of it. These bees prefer soils that are moist and have a high salt concentration.

Prepupae—the stage in which the bee spends the winter—are transplanted to artificial beds near the alfalfa field, where they start work when they emerge in the spring.

ROCKS IN THE head may not be good, but apparently stones in the soil are all right. Experiments at the University of Maine show that removing stones increased runoff and erosion.

IN KAINGAROA, New Zealand, the *Kaingaroa Forest News* concludes each issue: "Opinions expressed in this periodical are not necessarily condoned, or even understood, by the editorial staff."

Time, December 21, 1959

--Richard Vanderlip

Coming—better alfalfa

by Neil Dowlin

Here is the new aphid resistant alfalfa that farmers may be able to buy this fall.

WE USED to think Buffalo alfalfa was unbeatable; now we have a variety which is better. As early as the fall of 1960 you may be planting alfalfa which produces plants resistant to the spotted aphid. Several times you may have noticed veins in alfalfa leaves which were beginning to whiten, and you wondered why this happened. Later, your county agent probably told you the plant was infested with spotted alfalfa aphids.

If this aphid continued to feed on your alfalfa you would have noticed some leaves curling up, turning brown, dying, and dropping off. Aphids suck sugar (plant food) from plants and are thought to inject a toxin into the plant. The toxin and lack of sufficient food stunt the plant and may kill it.

In 1959 the Kansas Agricultural Experiment Station and USDA jointly announced the release of an alfalfa variety highly resistant to aphids. K-State Research Agronomist E. L. Sorensen states that all available seed is now out on a production basis. Favorable growing conditions will make it possible for you to plant the aphid-resistant variety this fall.

This variety was released under the name Cody. It was derived from the commonly grown variety Buffalo. Cody contains most of the desirable characteristics of Buffalo, including its resistance to bacterial wilt, states Sorensen.

Seed men may be asking you to start the 1970's with creeping-root alfalfa. It spreads by sending up shoots from horizontal roots. This enables the plant to spread much like brome, which is one of several reasons why agronomists of the experiment station want to adapt creeping-root alfalfa to Kansas.

Plants which send up shoots from horizontal roots may be less subject to damage by grazing or by mechanical injury during mowing. If the main plant is killed your stand can be maintained by shoots growing from the long horizontal roots.

Professor Sorensen says, "Creeping-root alfalfa is more drought resistant than types now being grown in Kansas. Because it can withstand long dry periods it should supply forage quickly when moisture arrives." Several years may be needed before it can be adapted to Kansas because it is necessary to add resistance to certain insects and diseases. Other disadvantages at present include low forage and seed production.

In five years conventional inoculating methods may be as old fashioned as propeller-driven airplanes. A process which inoculates alfalfa seed at the processing plant was used on some seed sold in 1959. It will save you time and mess when planting, says the processing company.

The pre-inoculation method is said to place live nitrogen-fixing bacteria under the seed coat where they can live for several months. Bacteria applied by conventional methods die if the seed isn't planted within six hours after treatment. If the bacteria are under the seed coat the delay due to a sudden rainstorm won't cause you to re-inoculate.

One agronomy magazine reports an effective job of inoculating when the seed was planted 11 months after bacteria were applied by this method. However, they recommended inoculating again if the seed has been stored longer than six months.

The method includes processing the seed to make the seed coat more permeable to the live bacteria. Nitrogen-fixing bacteria are suspended in a liquid and applied to each seed and forced inside by a vacuum. After drying and sacking, the seed is sent to distributors.

According to available information pre-inoculated alfalfa seed costs 8-10 cents more per pound than untreated seed. At this time only three or four pre-inoculated varieties are available.

What will future varieties of alfalfa be like? What other methods of improving alfalfa will be devised? Your guess is as good as ours.

The white veins in the leaves of this alfalfa plant were caused by the spotted alfalfa aphids shown feeding on the healthy leaf.

Electronic Ovens Offer

Faster Cooking

Without Heat

by Mary Jo Mauler

GO AHEAD and put that good china dish in the oven! If it's an electronic oven, that is!

Yes, with an electronic oven you can cook dinner and then serve it on that same china plate. And—the plate will be as cool as it was when you put it in.

The magic unit which can do this for you looks like any other oven—stainless steel with a plastic and glass shelf inside. A perforated panel in the door allows you to watch what is going on inside.

Cooking is done by high-frequency microwaves that bounce off the stainless steel walls of the oven without any change of heat and pass into the food. They agitate the molecules within the food so that they rub against each other to create heat. Hence the heat remains within the food and the dishes that the food is in stay as cool as they were when put into the oven.

Metal Pans Won't Work

Your old-fashioned metal cooking pans won't work in this electronic oven! Metal reflects or bounces back the microwave energy so it can't reach the food. You will do most of your cooking in glass or paper. Heavy glass dishes work well. You can even use your glass coffee pot to cook and serve soup in. If you are going to heat or cook something briefly, you can do it in your china dinner plates, soup bowls, coffee cups, or even your finest crystal goblets. For that quick and informal meal, you may use paper plates.

The time-saving feature of this oven it the one you'll probably enjoy the most. Cooking time for individual dishes can be cut, on an average, to one-fifth of the time needed when using a conventional oven. In some cases, you will cut the time to as little as one-tenth of the usual cooking time.

The chart below showing the comparison in cooking time between the electronic and the standard oven will give you a better picture of the time it will save you.

Comparative Cooking Times

	Electronic oven	Standard oven
Baked stuffed potatoes	3-5 mins.	40-45 mins.
Eggs	1½ mins.	9 mins.
Pot roast	35 mins.	2½-3 hrs.
Meat loaf	10 mins.	60 mins.
Turkey, 10-lb.	60 mins.	4 hrs.
Upside down cake	7 mins.	45 mins.
Baked custard, 1 serving	4 mins.	45 mins.
Baked apples, 2	4 mins.	45-50 mins.
Frozen meat balls and spaghetti	4 mins.	75 mins.

Since so much of your cooking is done in the serving pieces, and the pans don't get scorched by heat, you will find that your electronic cooking is very tidy. The time you save in cleaning up afterwards is as amazing as the time saved in cooking.

The oven can also save you time by the speed at which it can defrost frozen foods. The electronic oven can defrost a package of frozen fruits in one minute as compared to the two to four hours it would ordinarily take. It can defrost a ten-pound turkey for you in an hour which now takes anywhere from 24 to 48 hours.

Many of your frozen foods can be prepared in the plastic packages that they are frozen in. Merely place the plastic bag on a dish in the electronic oven and set the timer for two minutes, open the door briefly to release some of the pressure, and then close to complete the cooking.

When you want to prepare frozen vegetables that come wrapped in waxed paper, just peel off the paper

(continued on page 12)

An electronic oven such as this will make cooking and baking quicker and cleaner.

More Science Stressed as

Ag Curriculums Change

By C. Peairs Wilson

Director of the School of Agriculture

A STUDENT entering the School of Agriculture for the first time next fall will have a new set of required courses. He won't have to decide upon his major immediately because of a "uniform freshman year." After three years of study and discussion by a faculty committee, the following changes have been made in the curriculums of the School of Agriculture. These changes will become effective in September, 1960.

Students enrolling prior to September, 1960, will continue in their present curriculum unless they want to change. Beginning with the fall of 1960, all entering freshmen and transfer students will be under the revised curriculums.

Five Changes Made

The major curriculum changes are:

1. Six of the present eleven curriculums will be continued, but with substantial revision. These are Agriculture, Dairy Manufacturing, Feed Technology, Milling Technology, Landscape Design, and Agricultural Education.

2. Five of the present curriculums will be discontinued. These are Agricultural Economics, Technical Agricultural Economics, Technical Agronomy, Horticulture, and Agricultural Journalism.

3. The Curriculum in Agriculture was made sufficiently basic and flexible to accommodate not only students previously in the General Agriculture Curriculum, but also those in the curriculums which will be discontinued.

4. All six of the remaining curriculums will have a "uniform freshman year." Thus, an entering freshman need not decide which curriculum to enter until after he has been on the campus for some time.

5. All six curriculums in the School will require the same minimum of 136 hours for graduation.

Revisions in the Curriculum in Agriculture were more far-reaching than for the other curriculums: Due to space limitations, this is the only one of the six curriculums presented in full here.

Basic Sciences Stressed

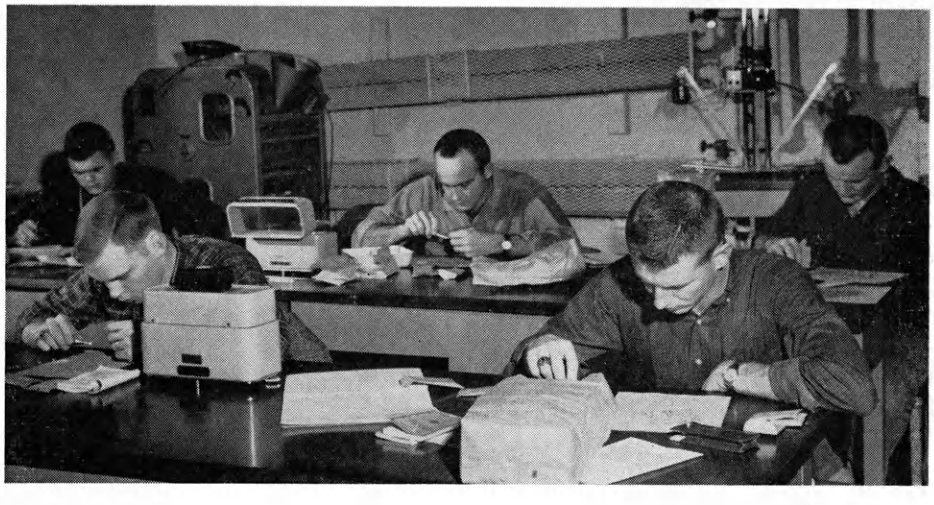
Revisions in the Curriculum in Agriculture were based on these premises:

1. Professional agriculture is an applied science. Therefore, courses in agriculture should be preceded by appropriate mathematics and basic science courses. These mathematics and basic science courses are as follows: mathematics—algebra, trigonometry, and statistics; physical sciences—geology, chemistry, and physics; biological sciences — botany, zoology, bacteriology, entomology, and genetics; and the social sciences—economics, psychology, and political science.

2. The application of the principles of science to agriculture is the common knowledge needed by all students in the Curriculum in Agriculture. This common core of knowledge can be obtained from five fields —namely, soils, plant science, animal science, agricultural economics, and agricultural engineering. One four-hour course is required in each of these five fields.

3. To acquire some depth of knowledge in a major field and some breadth of knowledge outside the major field, there should be sufficient electives for flexibility. Hence, after allowing for an orientation course and general university requirements,

Because of the new curriculum change in the School of Agriculture, future students can expect more basic science courses. There will be no specialization the freshman year.



39 hours of electives are provided, 12 of which must be in a major department, 12 outside the major department, and 15 that may be either in or outside the major department.

These revisions in curriculums involving, (1) the uniform freshman year, (2) strengthened mathematics and basic science requirements and, (3) the new required courses in agriculture will necessitate a rather thorough departmental review of course offerings to make more efficient use of student and faculty time.

Attitude Needed for Learning

In the final analysis, the formal listing of a curriculum in a university catalogue is relatively unimportant in evaluating a university's program. More important is the attitude toward learning a faculty stimulates among its students. Do students maintain an open and inquiring mind? Are students willing to assume their full share of the responsibility for their own education? Do students have the ability to distinguish between the trivial and the important? Do students have a working knowledge of useful tools and techniques in analyzing problems? Do students have sufficient grasp of the subject matter content of a field to deal with problems in that field? Are students able to recognize a problem, select pertinent facts to bring to bear on the problem, exercise discriminating judgment, and reason to logical conclusions? Are students familiar with sources of information so that they can increase their knowledge over a lifetime?

Only as a curriculum provides the framework within which the educational process takes place, is it important in a university's program. At best, a curriculum allocates a student's academic time. This will help maintain balance in a student's academic program and assure that important areas of knowledge are not ignored.

CURRICULUM IN AGRICULTURE

B.S. IN AGRICULTURE

FRESHMAN YEAR

FIRST SEMESTER			Hrs.	SECOND SEMESTER			Hrs.
Gn. Ag.	003	Agr. Seminar	0	Gn. Ag.	003	Agr. Seminar	0
Gn. Ag.	100	Agr. in Our Society	2	Chem.	230	Chemistry II	3
Chem.	210	Chemistry I	5	Ec. So.	110	Economics I	3
Engl.	100	Written Comm. I	3	Engl.	120	Written Comm. II	3
Math.	100	College Algebra	3	Math.	150	Pl. Trig.	3
Psych.	110	Gen. Psychology	3			Elect. or Required	4
		Air or Mil. Sci.	1			Air or Mil. Sci.	1
Ph. Ed.	010	Physical Education	0	Ph. Ed.	010	Physical Education	0
			17				17

(Listed below are additional requirements beyond freshman year)

AGRICULTURE:

Agron.	270	Soils	4
Agron. / Hort.	200 / 200	Plant Science	4
A.H. / D.H. / P.H.	200 / 200 / 200	Nutr. & Mgt. Fm. An.	4
Ag. Ec.	200	Prin. of Agr. Econ.	4
Ag. E.	300	Engg. in Agr.	4
Gn. Ag.	003	Agr. Seminar— 6 semesters credit	

BIOLOGICAL SCIENCE:

Bot.	200	Gen. Botany	4
Zool.	200	Gen. Zoology	4
Bact.	220	Gen. Microbiology	4
A.H.	400	Genetics	3
Ento.	200	Gen. Ec. Entom.	3

PHYSICAL SCIENCE:

Chem.	190	El. Org. Chemistry	3
Gl. Gg.	100	Gen. Geology	3
Phys.	210	Gen. Physics I	4

COMMUNICATIONS:

Spch.	105	Oral Comm. I	2
Journ.	350	Agr. Journalism	3

SOCIAL SCIENCE:

H.G.P.		Political Science	3

HUMANITIES:

		Credit hours	6

MILITARY:

		Air or Mil. Sci.	2

PHYSICAL EDUCATION:

Ph. Ed.	010	Physical Education	2R

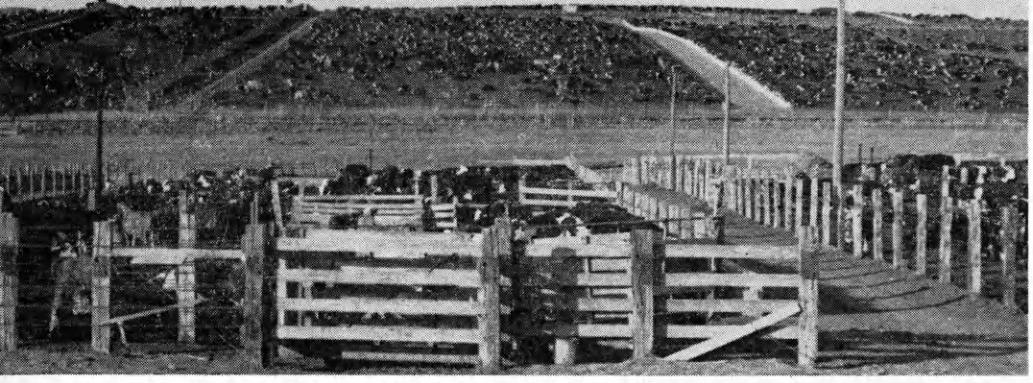
STATISTICS:

Stat.	320	Elem. of Statistics	3

ELECTIVES:

		Credit hours	35

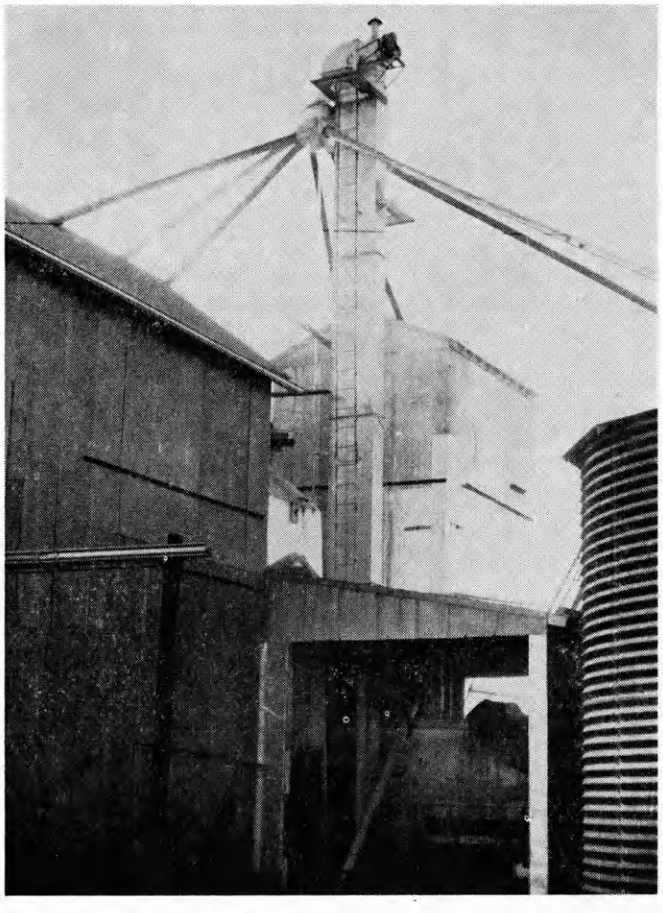
(Total hours required for graduation, 136)



Feedlot scenes like this are becoming common in western Kansas. Parts of three feedlots near Dodge City are visible. Approximately 15,000 cattle are being fed in this area.

Kansas Feedlots Con

Sorg

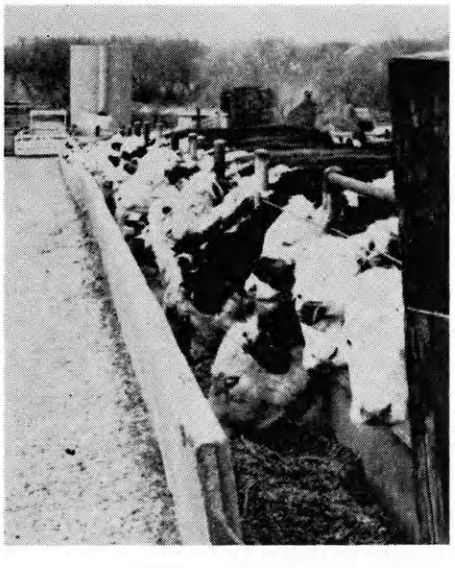


Bulk feed handling facilities such as this mill at the L. D. Coake feedlot near Dodge City make for fast and efficient feeding.

by

Laurice

Margheim



Tons and tons of beef are produced in these feedlots from Kansas feed. The consumers benefit from resulting low prices.

EVER SINCE the first Texas longhorn cattle arrived in Dodge City nearly a century ago, beef has been an important product of western Kansas. In the past most feeder cattle were either fattened in small farm lots, or shipped to the Corn Belt to be finished. This picture is rapidly changing as large commercial feedlots are appearing across western Kansas.

A commercial feedlot is one in which at least some of the cattle in it are being contract, or custom fed. Some feedlot operators feed for themselves as well as for others. Five cents a day plus the cost of the feed is the standard contract price. Some feedlots also take in cattle for a percent of the gain. Either way, at present prices, it figures out to about 18c-20c a pound gained.

Sorghums Encourage Feedlots

One thing that has brought commercial feedlots to western Kansas is the great increase in grain sorghum production the past decade. Increased irrigation of grain sorghums and acreage controls on wheat are the main factors causing the increased feed grain production. Hybrid sorghums are giving the grain sorghum industry another big boost.

In a study recently completed at K-State, associate professor of Agricultural Economics John McCoy found that in 1957 the proportion of cattle finished in Kansas' commercial feedlots was five times greater than in 1948. Since 1953 the expansion has been greater in western than in eastern Kansas. Although exact figures aren't available since 1957, several new feedlots were started in western Kansas in the past year.

One of the newest feedlots is Great Bend Feeding Inc., begun by Pete Kirkman & Sons just last summer. According to Roger Murphy, a step-

vert

hums to Beef

son of Mr. Kirkman, they are now feeding 1,700 head and plan to increase to 2,000 head soon, with continued expansion in future years. This lot is rather unique among the western Kansas lots in that it is somewhat vertically integrated with the packing industry. Theis Packing company of Great Bend has 1,200 head on full feed there at the present time.

The Doll Feed yard at Larned is still under construction. It is an addition to the Doll livestock commission firm in Larned. According to Jack Doll, one man could now feed 1,500 head but it may be possible to double, or even triple this number in the future. All grain is picked up with vacuum tubes in the Doll feed mill. This eliminates dust and saves labor when the storage bins are about empty. Mr. Doll says the system is so new that it still has some "bugs" to be worked out before it is completely satisfactory.

Automation Replaces Labor

Labor is cut to a bare minimum everywhere you look in these large feedlots. The bunks are continuous concrete troughs on the outside of the pens. Feed trucks are equipped with conveyors that unload the feed into the bunks as they are driven down the alley between pens.

The Winter Feed Lot at Dodge City, feeding around 5,000 head, has a feed mill which enables one man to mix and load any ration on a truck in a matter of minutes. There is a control panel with a button on it for each ingredient. When a button is pressed that ingredient flows into a large scale until the button is released. When the desired amount of each ingredient is on this scale, a lever is pulled which dumps the completed ration into a conveyor. It is then elevated to a storage bin over another scale. When a truck drives onto this scale the desired amount of the ration can be dumped into the truck by merely pulling a lever.

Feeding Operations Large

Silage is usually put up in large trench silos. The silo at Great Bend Feeding Inc. is 750 feet long, 15 feet deep, and averages 39 feet wide. A tractor-mounted loader will load about 1¼ tons of silage a minute into self-unloading trucks.

Pete Clair, manager of the L. D. Coake feeding operation at Dodge City, at present feeding 3,000 head, estimated that there are about 14,000 head of cattle in yards east of Dodge City. Several feed yards border each other and it is hard to tell where one ends and another begins. These lots are still expanding and another one is being built south of Dodge City.

Most lots are located on hillsides for good drainage. The center of each lot usually isn't paved. Most of the feed bunks have concrete aprons for the cattle to stand on while feeding.

For some operators, getting rid of the manure is quite a problem. W. R. Harmon, an employee of the Winter Feed Yard, said, "We have a tractor here ready to load a farmer's truck anytime, but we can't give it away." Consequently, it is piled into hills in the center of the lots. L. D. Coake is now cleaning his lots with a carryall and spreading the manure on a nearby field.

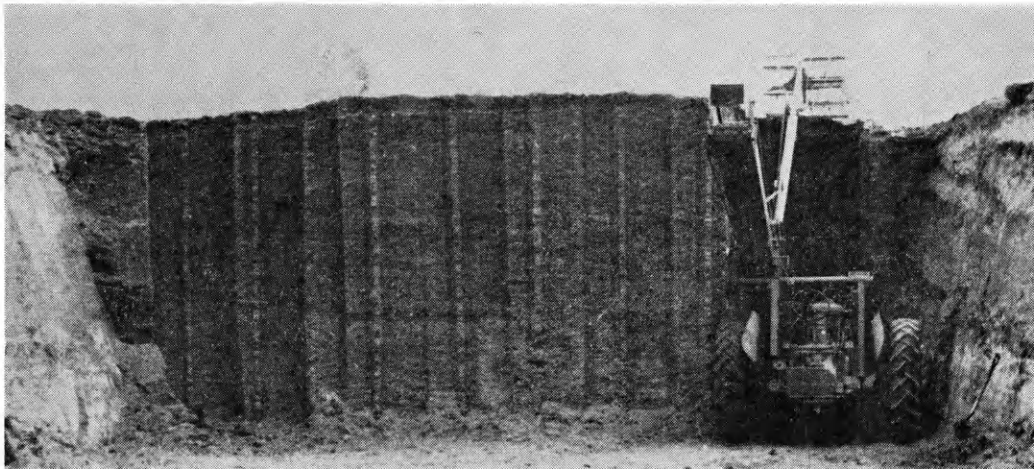
It is hard to comprehend all the effects the commercial feed lots will have on the economy of Kansas. Professor McCoy says, "Expansion at the rate of recent years will increase competition among commercial feedlots and between them and farm feeding. Overexpansion is liable to result before this trend settles down to a more normal rate of expansion. This competition will probably force profits down, but won't likely drive the small feeder out of the business because he is using labor that would, in many cases, be wasted if he weren't feeding cattle in otherwise slack seasons. The farmer who feeds will be under pressure to increase his efficiency. He will have to get big enough to use some labor-saving equipment such as feed wagons, fence-line feed bunks, and silage loaders. Commercial feedlots in Kansas will keep competitive pressure on the Corn Belt feedlots."

Kansas Beef Finds Ready Market

As our national standard of living increases, more beef will be demanded in proportion to the cereal grains. As Kansas changes from a wheat state to a producer of feed grains and beef, it may be merely initiating a national trend. Most of the reduction in the cost of producing beef will be passed on to the consumer in the form of lower priced meat.

Instead of looking at the feedlots as a menacing form of competition, farmers may look to them as a new market for their feed. Large feedlots give a cash market for silage as well as grain and some roughage. They also may give a bigger market for feeder cattle produced locally.

The enormous size of this trench silo at Great Bend Feeding Inc. dwarfs this tractor-mounted ensilage loader. Labor-saving equipment is the key to these large operations.



Faster Cooking

(continued from page 7)

and set the unopened carton on a flat plate in the electronic oven. Cook three to five minutes, then put them on a plate, season, butter, and serve. Meats or vegetables you cook the electronic way, without external heat, retain much more of their vitamin content.

You may be disappointed when you cook some foods and find that they don't have that crisp brown exterior that you are accustomed to. Since many homemakers want that flavored crust, the electronic manufacturers now offer a unit with a built-in electric unit for browning. Some have a separate browning unit on top of the electronic compartment.

Cooking Time Important

Be very exact with the timing when you are using your electronic oven! If you increase the quantity, you must increase the cooking time accordingly. If in doubt, check a little before you think the food should be finished. The cooking action will stop immediately when you open the door. Since this cooking is so fast, you have to be extra careful because the foods do not burn in the usual way; however, they may dehydrate if left too long.

Your electronic cooking center uses about one-third less electricity than conventional cooking ranges. An electronic unit costs about $1,200 plus installation and will last about 15 years in regular home use.

He: "They had to shoot poor Fido today."
She: "Was he mad?"
He: "He wasn't any too pleased."

Joe: My girl friend is a twin.
Ken: How do you tell them apart?
Joe: Her brother is built different.

Brooklyn teacher: "What is a stoic?"
Brooklyn youth: "De boid that brings de babies."

On mules we find two legs behind,
And two we find before;
We stand behind before we find,
What the two behind be for.

TUNE-UP for TROUBLE-FREE work

by Arnold Good

WHEN spring farm work starts there usually isn't any let-up and there sure isn't time to mess around with a tractor that isn't running right. So if you don't already have your tractor ready to go, why not check it out one of these afternoons and be ready for spring work.

What needs to be done on your tractor depends on its newness and how long it has been since its last overhaul. If it needs a complete overhaul, get it done before the spring rush starts.

Tune Your Own Tractor

Whether you overhaul the tractor yourself or have the job done by a mechanic, there are a few small things that need to be done after an overhaul job is completed. Most check-up jobs require no more than a little patience, and a few simple tools. A good companion on these jobs is your operators' manual.

If you have been sloshing around in feedlots with your tractor a good place to start the checkup is the front wheel bearings.

Pull the wheels and check the inner dust seals. If they are bad replace them because if they won't keep out dust and dirt your efforts are in vain. Then clean the bearings and repack them with a good grade wheel packing grease. Replace the bearings and check the gasket under the bearing cap to see that it is tight. Replace the front wheels and check the lug bolts which hold the front rims in place, since they sometimes work loose. While you're at the front end check it for play in the steering gear. Slack in the front end can be disgusting when traveling on the road or when doing ridge work.

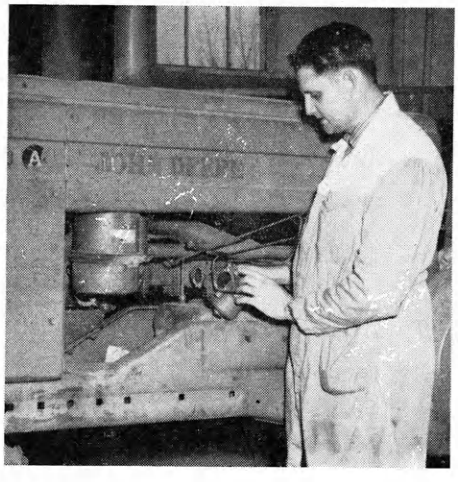
These Items Are Important

Trying to start a tractor with a dead battery can cause a lot of trouble when you're in a hurry. Some things to look at here are battery water level, cable connections, generator bearings, voltage regulator, and fuse connections. Pay special attention to the regulator, since a bad regulator can burn up both the battery and generator.

Two things to check carefully are the distributor and spark plugs. Winter work with long periods of idling for the tractor can foul plugs and points. This will make it hard to start and also waste a lot of gas. Gap the plugs according to the manual and file and set points.

Now that we have fire, let's make sure we have something to burn. Clean out all sediment bowls and fuel screens to get rid of dirt and condensed moisture. Clean the carburetor and check it, but remember that final adjustments should be made when the tractor is under load.

Checking the carburetor is important in getting your tractor ready for spring work.



Check the clutch for slippage or grab and while you're at it make sure that the brakes are adjusted correctly. Here is a good place to follow specifications of your operators' manual.

That about does it except for the regular lubrication and the cooling system check. Delay your cooling system check until it is warm enough to drain your anti-freeze.

A good time to flush the cooling system is after you've drained your anti-freeze. Check the water pump and fan belt and if your tractor has a thermostat pull it out and check it.

Finish your checkup with a tire inspection, then sit back and wait for a good day to start on that spring work. Don't forget to go back and check the cooling system when the weather warms up.

Stored Tractors Need Check-up

If your tractor has been stored, run through this check, but before you start it up, pull the spark plugs and squirt about four shots of light engine oil from a pump oil can into each cylinder. Replace your plugs and fire 'er up.

If you have a diesel this list still applies except for some alterations. You have no distributor to check and no spark plugs to set and clean. Your fuel system is a little more complicated, so the farmer should not attempt anything more than cleaning. The cooling system deserves closer attention, since proper operating heat range is important on a diesel.

These few hours work when you aren't too busy can save you a lot of trouble when you are in a big hurry. Remember that your operators' manual will have specifications and helpful suggestions to make things easier.

Valentines Can Have 'Taste Appeal'

by Janet Dawdy

GIRLS, they say the way to a man's heart is through his stomach. This being leap year and the romantic month of February, maybe food will help cupid's arrow along.

St. Valentine's Day is a splendid opportunity to show the man of your choice that your cooking ability is really up to date. Here are some recipes especially for that special day.

Valentine Punch

18 maraschino cherries
6-ounce can frozen pink lemonade concentrate
6-ounce can frozen pineapple-orange juice concentrate
4 cups water
½ cup maraschino cherry juice

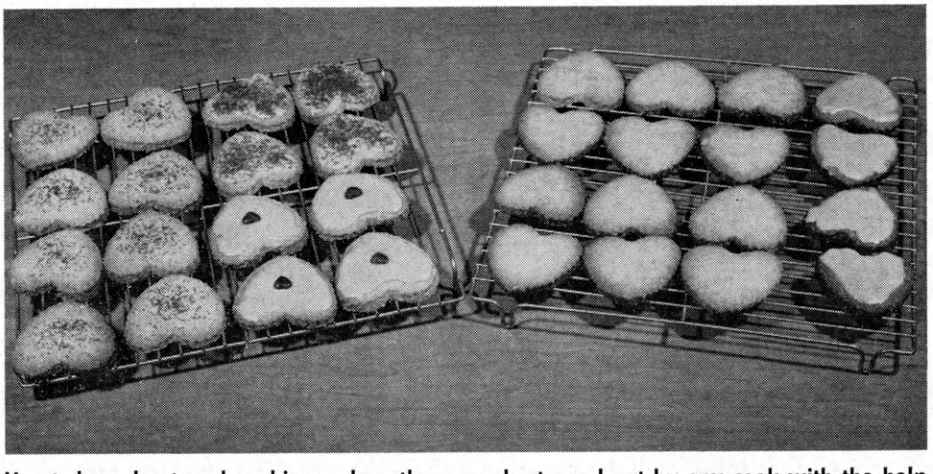
The day before you serve this drink, freeze a maraschino cherry in each of several ice-cubes.

Mix frozen juice concentrate with 4 cups water and maraschino cherry juice. Add the maraschino cherry ice-cubes. Makes 10-12 servings.

Sweetheart Dessert

18 Fig Newton Cakes (1-pound package)
1 quart cherry-vanilla ice cream

Stand Fig Newton Cakes around the sides of a heart-shaped cake pan. Scoop cherry-vanilla ice cream into the center and pack down well. Place in freezing unit of refrigerator until ready to serve. Unmold on a platter. Using a pastry tube, outline edge of heart with whipped cream.



Heart shaped oatmeal cookies such as these can be turned out by any cook with the help of a recipe contained in the accompanying story. They can be made in twenty minutes.

Cupid Tarts

1½ cups sifted flour
½ teaspoon salt
2/3 cup shortening
½ cup uncooked oatmeal
4 to 6 tablespoons cold water

Sift flour and salt together. Cut in shortening until the mixture resembles coarse crumbs; stir in oatmeal. Slowly add water, stirring until pastry forms ball. Let set 5 minutes. Divide in 8 parts, roll out on lightly floured board. Fit into tart pans; flute edges; prick. Bake in hot oven (425° F.) 15 to 20 minutes, cool and fill. Makes 8 tarts.

Filling: Combine 1 cup cherry juice with 1 tablespoon cornstarch, ½ teaspoon cinnamon, and a dash of nutmeg. Cook until thick and glossy. Pour over 2 cups of drained, cooked, sweetened cherries, spoon into tart shells. Serve with whipped cream on top.

'To My Valentine' Cookies

2½ cups sifted flour
1 teaspoon baking powder
½ teaspoon salt
¾ cup butter or margarine (soft)

¾ cup sugar
2 tablespoons milk
1 egg
1 teaspoon vanilla
1 cup oatmeal (uncooked)

Sift flour, baking powder, and salt into bowl. Add butter, sugar, milk, egg and vanilla. Beat until well blended, about 2 minutes. Stir in rolled oats. Roll out on lightly floured board or canvas to ¼-inch thickness. Cut into heart shapes. Bake on greased cookie sheets in moderate oven (375° F.) about 15 minutes. Decorate with tinted confectioners' sugar frosting. Makes 3½ dozen.

Cherries are associated with our first president, George Washington, whose 228th birthday we will celebrate February 22.

A simple recipe for a dessert that is right in season and makes mighty good eating is cherry pudding.

Cherry Pudding

1 can (16-ounce) sweetened red cherries, drained
1¾ cups sifted cake flour
2 teaspoons baking powder
½ teaspoon salt
1/3 cup shortening
½ cup sugar
1 teaspoon vanilla extract
½ teaspoon almond extract
1 egg
½ cup milk

Cream together shortening, sugar, vanilla, almond, and egg until mixture is fluffy. Add dry ingredients alternately with milk, adding flour mixture first and last; beat until well blended after each addition.

Spread half of the drained cherries in the bottom of a greased 8 x 8 x 2 inch baking pan. Spread half of the batter over the cherries. Repeat another layer of cherries and the remaining batter. Sprinkle the top with granulated sugar. Bake in 350° F. (moderate) oven about 45 minutes.

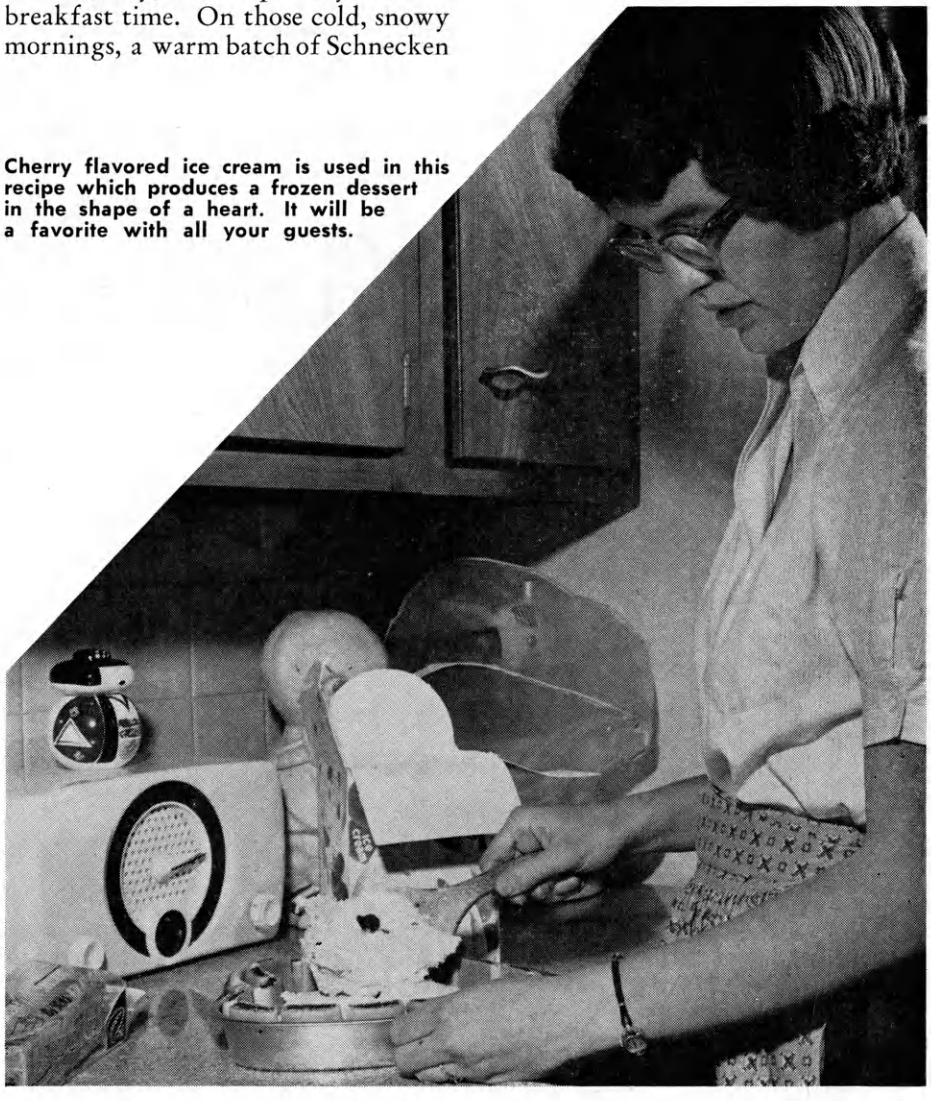
Serve warm with cherry sauce. This will make 6 servings.

Weather is nothing to brag about in February, and especially around breakfast time. On those cold, snowy mornings, a warm batch of Schnecken pecan rolls will melt anyone's heart and the weather will soon be forgotten.

Schnecken Pecan Rolls

½ pound butter
2½ cups flour
2/3 cup scalded milk
1 ounce yeast
1 tablespoon sugar
3 egg yolks

Cream butter, blend in flour and eggs. Activate yeast with sugar and pour into mixture. Add milk. When mixture is dry knead until soft and pliable. Add extra flour if necessary. Flour board, cut recipe in four. Roll out one portion as for pie. Melt ½ pound butter. Place 1 teaspoon melted butter into each muffin cup. (Recipe makes about 40 muffin size.) Add 1 teaspoon brown sugar and several pecans to each cup. Brush rolled dough with melted butter. Spread with a mixture of sugar and



Cherry flavored ice cream is used in this recipe which produces a frozen dessert in the shape of a heart. It will be a favorite with all your guests.

cinnamon. Place a row of raisins across and roll dough. Cut in 1-inch slices, turn and place in muffin cup. Allow to rise for 1 hour. Bake at 350° F. for 30 minutes. Invert pan, and remove.

Brighten up your other meals with a pretty and nutritious salad. It will lend appetite appeal as well as aid in balancing your diet. It can also be a special for that "valentine's day dinner."

Cranberry Banana Salad

1 envelope (1 tablespoon) unflavored gelatin
¼ cup water
1-pound can (2 cups) jellied cranberry sauce
10 marshmallows
1 cup chopped bananas
1½ teaspoons red food coloring
1 cup heavy cream, whipped

Soften gelatin in water. Heat cranberry sauce and marshmallows over very low heat until marshmallows melt. Add gelatin and stir until dissolved. Chill until partially set. Add bananas, lemon peel, and red food coloring. Fold in cream. Pour into individual molds or a 1-quart mold. Chill until firm.

In the

Aggies' World

by Norman Werner

Two Seconds at Denver

K-State's junior livestock and wool teams sewed up two second-place awards at the National Western Livestock show in Denver.

The junior livestock team lagged two points behind the Iowa State team in the carlot contest and the wool team lost to Utah State by three points.

Kenneth Herbster, AH Jr, and Frank Filinger, AH Jr, won individual honors by placing first in the wool and carlot contests, respectively.

Dave Slyter, AH Jr, was second in beef cattle and James McCoy, AH Jr, was fourth high individual in the entire contest.

Other members of coach Don Good's junior livestock team were Fred Eisele, AH Sr; Bill Fultz, AH Jr; Gary Proffitt, Ag Fr; and Gary Rieck, Agr Jr.

Carl Menzies' wool judgers were Kenneth Herbster, AH Jr; Wayne Bacon, Ag Jr; Lewis Anderson, AH Jr; Terry Silvius, Ag Soph; and Lowell Slyter, AH Fr.

Crops Team First

K-State took top honors in the intercollegiate crops judging contest at the International Livestock Exposition in Chicago. The four-man team consisted of Earl Beck, Horton; Bill Fuller, Miltonvale; Frank Toman, Ellsworth; and Don Wagner, Coffeyville.

The crops judging team amassed 5,157 points to pace the other eight teams competing. Oklahoma State was second, and Texas Tech was third.

Wagner and Fuller were second and third high individuals, respectively. Fuller was second in commercial grading and third in identification, while Wagner was third in commercial grading and fourth in identification.

K-Staters Judge at Chicago

K-State's livestock judging team, coached by Don Good, placed 14th among 38 teams entered in intercollegiate contests at the International Livestock Exposition in Chicago.

Texas A&M won the contest, with Ohio State, West Virginia, Missouri, and Illinois taking second, third, fourth, and fifth places, respectively.

Other livestock judgers were Gerald Clary, Garland; Jim Lonker, Medicine Lodge; Gary Cummings, Kingsdown; and Don Miller, Everest.

Judging Team Places

E. L. Mader's crops judgers placed third among seven teams competing in the national crops judging contest at Kansas City.

As a team the K-State judgers were second in both seed judging and commercial grading and ranked sixth in identification.

Bill Fuller, Miltonvale, was the fifth high man in the contest, and ranked fifth in commercial grading and eighth in seed judging. Don Wagner, Coffeyville, was eighth in the contest and ranked fifth in seed judging and seventh in commercial grading. Frank Toman, Ellsworth, was the third man on the team and made his best showing in commercial grading, where he was ninth.

Barr Receives Award

Bryan B. Barr, Manhattan, has received the highest award given by the National Block and Bridle club.

In recognition of his honor, Barr received the Merit Trophy Award at the annual meeting of the national Block and Bridle club in Chicago.

Barr was selected for his campus activities, scholarship, and awards and honors which he has received while in school.

As an undergraduate, Barr was president of Alpha Zeta honorary fraternity, the Ag Council, and the Ag Association; and was vice-president of Blue Key. He received freshman Phi Kappa Phi scholarship recognition, Gamma Sigma Delta sophomore recognition, and was elected to Phi Kappa Phi. He was a member of junior and senior livestock judging teams and belonged to Block and Bridle and the Collegiate 4-H club.

'He Who Laughs Last...'

An old storekeeper in Kentucky was taking his last breaths. A sorrowing family had gathered around his bedside.

"Is Ma here?" he asked wearily.

"Yes, Zeke," she replied.

"And my oldest son?"

"Yes."

"And the other five boys?"

"Yes."

"And the five girls?"

"Yes, Zeke."

The failing man struggled mightily to a sitting position. "What's the big idea?" he shouted. "Who's tending the store?"

The old lady was teaching the Sunday School class. "There are many men and women in heaven," she said.

"Why don't we see pictures of men angels with beards, then?" asked little Marian.

"That," replied the teacher as she thought of some of the men she had known, "is because most of them get there by such a close shave."

Don't worry about America's future. Millions of smart little cookies are growing into wise-crackers.

Aggie: "Do you dance?"

Northwest girl: "Oh, yes, I love to!"

Aggie: "Great, that's better than dancing anytime."

The farmer ran quickly to his barn after hearing a terrific explosion. "What happened?" he asked the hired man.

The hired man replied: "Well you know that new chicken feed you bought that's guaranteed to make them lay eggs or bust?"

Farmer: "Yes."

Hired man: "Well one of the roosters just got hold of some."

Engineer: How about a kiss?

Co-ed: I have scruples.

Engineer: Oh, that's OK. I've been vaccinated.

Papa Gnu came home one evening and Mama Gnu looked shyly at him and said, "I've got Gnus for you."

Judge: Officer, what makes you think this engineer is intoxicated?

Officer: Well, judge, I didn't bother him when he staggered down the street, or when he fell flat on his face, but when he put a nickel in the mailbox, looked at the bank clock and said, "Get me to a doctor; I've lost 30 pounds," I brought him in.

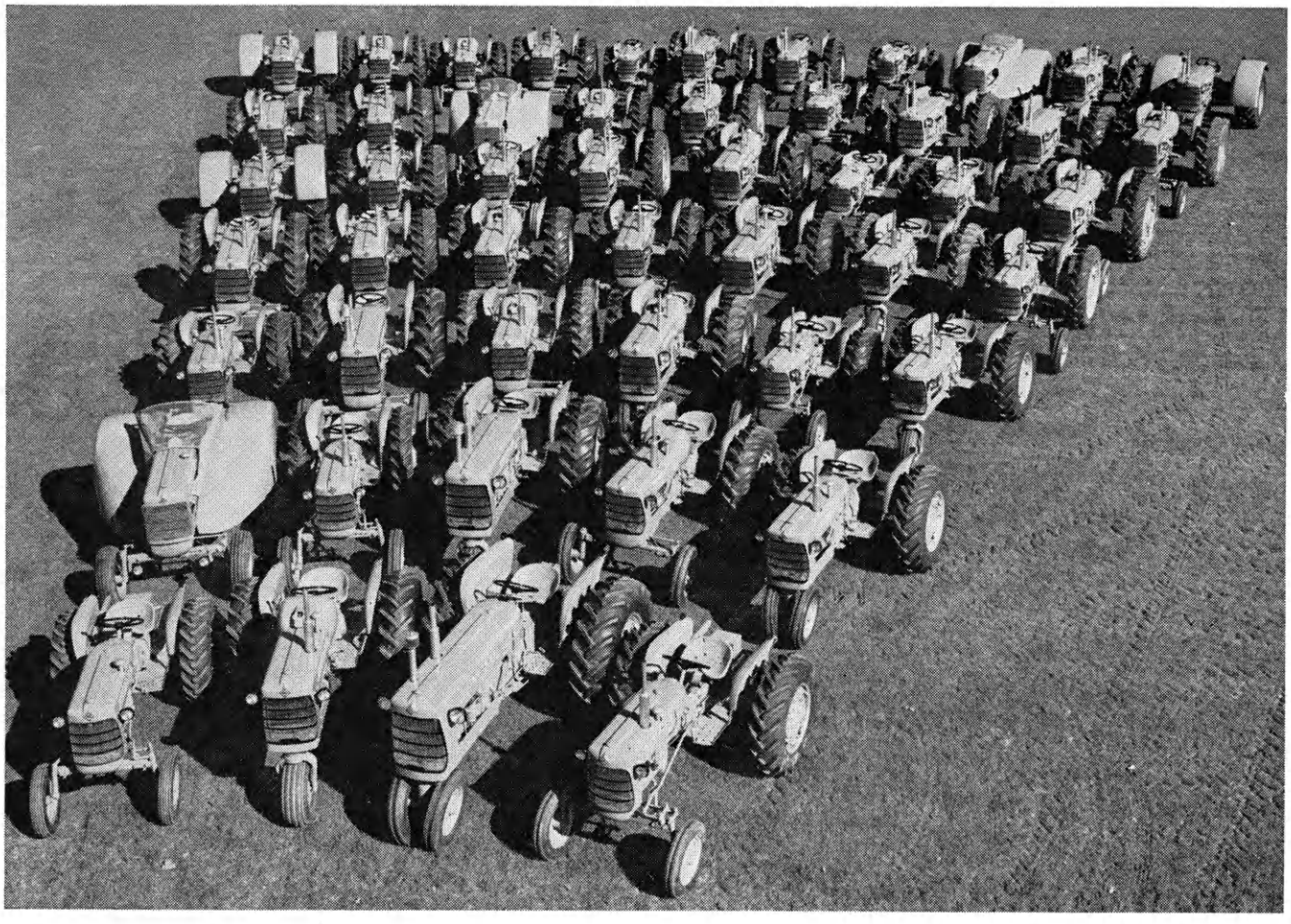
Prof: I'm letting you go ten minutes early today. Please leave quietly so as not to awaken the other classes.

The city girl was visiting the farm boy. They saw a cow and calf rubbing noses.

"Oh," said the love-smitten farm boy, "that makes me want to do the same thing."

"Well, go ahead," replied the girl. "It's your cow."

Ready Now for a New Decade...



50 Great D-Series Tractors from Allis-Chalmers Research

Research and engineering at Allis-Chalmers have greatly widened the application of new power principles for tractor users everywhere.

Tractor work becomes easier, faster, more productive whether it's used in 6-row corn farming or tobacco a row at a time . . . by grain growers, fruit and vegetable growers, or cotton and rice producers.

Pictured here is the Allis-Chalmers tractor line for the sixties — from the 1-row D-10 to the big D-17 models.

In utility tractors, Allis-Chalmers has brought major new performance advancements. Shuttle-Clutch operation with the D-14 Utility Tractor is a good example.

More effective power to serve more people in all areas, whatever they grow, is the Allis-Chalmers story for 1960 and beyond.

ALLIS-CHALMERS, FARM EQUIPMENT DIVISION, MILWAUKEE 1, WISCONSIN

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Low-cost, 2-3-plow Diesel

gives you more "do-ability," famous IH durability!

32 hp* International® B-275 outfeatures other 2-3-plow Diesels...outworks, outsaves them all! The B-275's price tag is low! Fuel savings of up to 50% help it pay for itself, fast! But greater "do-ability" is what makes the rugged B-275 the most wanted Diesel in its class.

Smooth, 4 cylinder direct-start Diesel engine delivers 29 drawbar hp for just pennies an hour.

**Belt hp corrected to standard conditions*

Seven power sizes—10 to 85 hp—with today's widest choice of models and fuels make it easy for a farmer to pick a Farmall® or International tractor that *exactly* fits his needs. All these IH tractors have job-speeding, work-saving features galore. And extra built-in weight for more seasons of carefree service, and operator comfort that tops 'em all are typical bonus features. Contact your IH dealer for a demonstration of any IH tractor and matched McCormick® equipment.

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