

In the KIN, over the past 3 years, 2137 has outperformed other selections or varieties substantially, except for Jagger. Also, 2137 had a test weight improvement of 2 pounds per bushel over 2163.

2137 represents improvements in leaf rust (probably carries one additional gene different from 2163) with slightly improved reactions to both tan spot and septoria. Although not shown in these data, 2137 appears to be more susceptible to scab and is probably not as tolerant to aluminum toxicity as 2163, but still has an acceptable level of tolerance.

Table 3. Three year summary (1993, 94, 95) for selected varieties grown in the KIN averaged across all locations

	Yields (bu/a)			
	1995	1994	1993	ave.
2137	36.8	57.3	57.7	50.6
Jagger	37.2	53.3	61.1	50.5
2163	31.5	51.0	54.3	45.6
Ike	25.7	53.4	50.8	43.3
Karl 92	28.4	50.9	49.7	43.0

	Test Weights (lbs/bu)			
	1995	1994	1993	ave.
2137	55.6	57.7	56.4	56.6
Jagger	56.0	57.2	57.0	56.7
2163	53.4	55.0	55.4	54.6
Ike	56.2	58.5	58.4	57.7
Karl 92	56.0	58.5	58.2	57.8

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2137 Hard Red Winter Wheat

2137 is a new hard red winter wheat variety developed cooperatively by the Kansas Agricultural Experiment Station and the Agricultural Research Service, United States Department of Agriculture. Foundation seed of 2137 was distributed to registered seed growers in the fall of 1995. Foundation and registered seed will be available for fall planting in 1996.

Origin and development. 2137 was selected as an F4 head row from the cross W2440/W9488//2163, where W2440 = Sturdy//Coker68-15/MOW7510/3/Tam W-101; W9488 = IN4946A-18-2/MOW7718 /3/Sturdy/Kaw and 2163 = IN4946A/MOW7470/3/NB/SRW//SRW.

2137 was originally selected by wheat breeders at Pioneer Hi-Bred International, Inc working at Hutchinson, KS in 1988. In 1990, Pioneer closed their hard red winter wheat breeding station and donated the fixed lines and developing germplasm to Kansas State University. 2137 was evaluated in preliminary, advanced, and the Kansas IntraState Nursery (KIN) from 1988 through 1993 as KS92P0263-137. It was tested in the USDA Southern Regional Performance Nursery and the Kansas Variety Performance Test (VPT) in 1994-1995.

2137 was released to replace 2163 in all areas of Kansas. It represents improvements over 2163 for grain yield, test weight, flour yields and leaf rust resistance.

Agronomic characteristics. 2137 is an awned, white-chaffed, semidwarf hard red winter wheat. 2137 has a semi-prostrate growth habit and has slightly less fall grazing potential than 2163. It is approximately 2 inches taller and one day later in heading than 2163. Similar to 2163 in leaf color, 2137 has dark green vegetative growth, but 2137 has a lighter green spike than most white-chaffed varieties at heading.

2137 has excellent straw strength equal to 2163. Its winterhardiness is comparable to either 2163 or Newton. It is tolerant to aluminum toxicity, similar to 2163. 2137 has a coleoptile length similar to 2163 and should not be planted deeply.

Resistance to pests. 2137 is resistant to wheat soil borne mosaic virus, wheat spindle streak mosaic virus, and Hessian fly. It has good tolerance to leaf rust, speckled leaf blotch, glume blotch, powdery mildew, and tan spot. It is moderately susceptible to stem rust, wheat streak mosaic virus, and barley yellow dwarf mosaic virus.

Area of adaptation. 2137 is adapted statewide, but especially areas where 2163 has done well and is currently being grown. 2137 has performed best in central, north central and western Kansas. 2137 is extremely susceptible to Fusarium head scab and producers should avoid corn rotations in northeastern Kansas.

2137 represents improvements in leaf rust resistance, test weight and milling yield compared to 2163. It also has improved tolerance to glume blotch. It is intended to replace the variety 2163 in north central Kansas, where its maturity and disease resistance package make it best adapted. In addition, it should replace 2163 on low pH soils in central and south central Kansas. Its improved leaf rust resistance should also compliment and is different (Lr genes) than either 2163, Jagger or Custer. It is hoped, this additional diversity of resistance will reduce leaf rust loss in the southern Great Plains in the future.

Milling and baking properties. 2137 has average protein concentration, comparable to 2163, medium to mellow mixing time and tolerance and acceptable hard wheat milling characteristics. Its baking properties have been rated average, but acceptable by the Wheat Quality Council in 1993-94 small scale tests.

Performance Data. 2137 has been tested in the KIN for 3 years, the Kansas Variety Performance Tests for 2 years and the USDA Southern Regional Performance Tests for 2 years. In the VPT, 2137 has been among the top performing varieties across the state the past 2 years. In east and central Kansas, 2137 yielded 113 percent of the test average, 110 percent in the west, and 130 percent in irrigated performance tests. Although it has shown general adaptation and

performance across the state, 2137 has performed best in western, and north central Kansas, under both dryland and irrigated conditions. It can be recommended for all growing districts within Kansas.

In the last two years of the VPT, 2137 had a test weight advantage over 2163 of 2.5 pounds per bushel. The improvement in test weight patterns is a substantial compared to 2163. Although test weights of 2137 aren't equal to our best varieties (Ike or Karl 92), they are average and comparable to many varieties grown in Kansas.

Table 2. Average Yields (bu/a) for selected varieties in the 1994-1995 Kansas VPT

	1994	1995	ave.
2137	56.2	36.0	46.1
Jagger	52.5	39.2	45.8
2163	47.9	37.5	42.7
Ike	52.3	32.0	42.1
Karl 92	50.1	31.5	40.8
Tam 107	47.0	24.7	35.8

Table 1. Agronomic and pest resistance characteristics of 2137 and other currently popular varieties.

	Relative agronomic characteristics							Reaction to Pests							
	Maturity	Test weight	Winter hardiness	Coleoptile length	Lodging resistance	Shattering resistance	Powdery mildew	Leaf rust	Stem rust	Speckled leaf blotch	Tan spot	SBMV ²	SSMV ³	WSMV ⁴	Hessian fly
2137	3 ¹	4	5	5	2	6	4	3	7	2	4	1	1	5	1
Jagger	1	4	6	4	2	6	7	2	3	2	2	1	1	4	8
Ike	3	3	3	5	4	3	4	6	3	7	5	1	1	8	2
2163	3	5	5	5	2	7	2	4	4	2	4	1	3	5	1
TAM107	1	3	3	4	3	3	1	9	5	6	6	8	9	3	9
Karl 92	1	3	3	5	3	4	3	7	7	4	3	1	1	9	8

¹ Rated on a scale of 0 to 9. Except for Maturity (where 0 means earliest and 9 latest), 0 means excellent; 1-3 good; 4-6 average; and 7-9 susceptible.

² SBMV, Soilborne Mosaic Virus

³ SSMV, Spindle Streak Mosaic Virus

⁴ WSMV, Wheat Streak Mosaic Virus