Table 3. Yield summary for Danby and selected varieties in Kansas breeding program performance tests at dryland locations in western Kansas.

	Yield(bu/a)			
Variety	2005	2004	2003	3-year Avg
Danby	64.5	60.8	72.4	65.9
NuHills	61.8	59.1	71.1	64.0
Jagger	59.6	49.3	63.4	57.4
Jagalene	58.8	55.5	68.6	61.0
Ike	55.9	52.7	64.9	57.8
Overley	54.5	56.6	61.7	57.6
Trego	52.0	58.3	65.1	58.4
Lakin	49.2	52.0	58.4	53.2

Table 4. Test weight of grain produced by Danby and selected varieties in Kansas breeding program performance tests at dryland locations in western Kansas.

	Test Weight (lbs/bu)			
Variety	2005	2004	2003	3-year Avg
Danby	63.6	63.6	62.6	63.3
NuHills	62.4	62.8	62.0	62.4
Jagger	60.3	60.8	59.7	60.2
Jagalene	62.0	62.6	61.5	62.1
Ike	60.1	61.0	60.7	60.6
Overley	60.9	62.3	60.7	61.3
Trego	61.9	63.0	61.7	62.2
Lakin	60.3	60.9	59.5	60.2

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Danby Hard White Wheat

Danby is a new, hard white winter wheat variety developed and released by the Kansas Agricultural Experiment Station. Foundation seed was distributed to seed producers in 2005. Foundation, Registered, and Certified seed will be available in the fall of 2006.

Origin and Development. Danby is a hard white winter wheat selected from the cross Trego/KS84063-9-39-3-8w. The cross was made during the winter of 1995-96 at the KSU Agricultural Research Center-Hays. KS84063-9-39-3-8w was a sister selection made from Jagger at the same time the variety Betty was selected. Danby is best adapted to dryland production in western Kansas. It has been tested in replicated performance tests in Kansas since 2003 under the experimental designation of KS02HW34. It was tested regionwide in the 2004 and 2005 Southern Regional Performance Nursery and in the 2004 and 2005 Kansas Performance Tests with Winter Wheat Varieties. The development of Danby was supported by Kansas wheat producers' check-off dollars administered by the Kansas Wheat Commission. The Kansas Crop Improvement Association also provided partial support for the operation of disease screening nurseries during the development of Danby.

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Agronomic Characteristics. Danby is an awned, white-chaffed, hard white seeded wheat variety. It is medium late in maturity (equal to Trego) and has slightly better straw strength compared to Trego. Danby's coleoptile length is average for a semi-dwarf variety and it has good winter-hardiness. Fall and winter-grazing potential for Danby is average to below average. It does not break dormancy early in the spring like Jagger. Danby is nonshattering and has improved sprouting tolerance (equal to that of the red wheat Jagger). Ratings for agronomic characteristics of Danby compared to other varieties are given in Table 1.

Resistance to Pests. Danby has effective levels of resistance to stripe rust, stem rust, and has the same level of tolerance to wheat streak mosaic virus as Trego. Danby is susceptible to leaf rust, soilborne mosaic virus, and Hessian fly. A summary of Danby's pest resistance is presented in Table 1.

Area of Adaptation. The primary area of adaptation for Danby is similar to that of Trego. It is best adapted to dryland production in western Kansas. It has equaled or bettered the performance of our best wheat varieties in that area since 2003 (Table 2 and 3). Its performance under irrigation in western Kansas has not been thoroughly tested due to a number of failed irrigated tests in the last few years. However, the improved straw strength relative to that of Trego should help in an irrigated environment. In some years, it has done well in central Kansas tests, but it has been very erratic. Lack of non-rust foliar disease resistance and its susceptibility to soilborne mosaic are the most likely reasons for its erratic performance in central Kansas.

Milling and Baking Characteristics. Danby has produced hard white grain with excellent test weights (Table 4) and flour extraction rates. Its protein level has been equal to that of Trego's. Danby's bread-baking quality was evaluated in 2002 and 2003 by the Wheat Quality Council. They rated Danby as having above average overall baking quality both years. Danby's mixing strength is stronger than Trego's but similar to that of Jagger. It has good mixing tolerance with acceptable loaf volumes. Crumb color, grain, and texture have been good.

The overall Asian noodle qualities of Danby are similar to that of Trego but not as good as that of Lakin. However it has done a satisfactory job in Chinese raw noodles (salt noodle), but it is not outstanding. Color stability has been a problem for Danby in alkaline noodles. This is probably due to its intermediate level of the noodle browning enzyme, polyphenol oxidase. The Lakin level of this enzyme are more desirable in an alkaline noodle.

Table 2. Yield and Test weight summary for Danby and selected varieties from western Kansas dryland locations of the Kansas Performance Tests with Wheat Varieties.

	Yield(bu/a)		
Name	2005	2004	2-year Avg
Danby	68.5	52.4	60.5
(W) NuHills	67.6	52.0	59.8
Jagalene	67.2	56.5	61.8
Jagger	65.7	51.7	58.7
Overley	60.7	50.4	55.6
(W) Trego	58.5	48.7	53.6
(W) Lakin	53.9	48.9	51.4
	Test Weight (lbs/bu)		
	2005	2004	2-year Avg
Danby	61.1	59.5	60.3
(W) NuHills	61.6	59.2	60.4
Jagalene	61.6	60.1	60.8
Jagger	60.8	57.2	59.0
Overley	61.0	58.2	59.6
(W) Trego	61.1	57.8	59.4
(W) Lakin	60.0	57.1	58.5

Table 1. Agronomic and pest resistance characteristics for Danby and other varieties.[1]

	Class	Coleoptile rating	Winter hardiness	Maturity	Lodging resistance	Shatter resistance	Sprouting tolerance	Test Weight	SBMV[2]	SSMV[3]	WSMV[4]	BYDV[5]	Leaf rust	Stem rust	Stripe rust	Speckled leaf blotch	Glume Blotch	Tan spot	Powdery mildew	Hessian fly
Danby	HDWH	6	3	3	4	3	3	2	8	8	5		8	2	1	7			8	8
NuHills	HDWH	7	4	3	3	3	7	3	2		4		5		1			6	8	9
Jagger	HRW	6	6	1	5	5	3	4	1	2	4	6	8	3	1	3	6	3	7	9
Jagalene	HRW	4	3	4	3	4	2	1	1	3	5	7	5	2	2	4		5	8	9
Ike	HRW	7	3	2	4	3	2	3	1	5	9	6	9	3	5	8	6	7	6	1
Overley	HRW	5	6	1	3	5	2	3	1	2	4	7	2	3	1	3		3	8	8
Trego	HDWH	6	3	3	5	3	5	2	2	4	5	6	8	2	7	7	5	7	8	5
Lakin	HDWH	7	2	3	3	3	7	4	2	5	5	6	9	7	8	7	8	7	8	9

[1] Ratings based on 1 to 9 scale where 1=resistance or the best and 9=susceptible or poorest, except for maturity where 0=earliest and 9=latest.
[2] SBMV – Soilborne mosaic virus.
[3] SSMV – Wheat spindle streak mosaic virus.
[4] WSMV – Wheat streak mosaic virus.
[5] BYDV – Barley yellow dwarf mosaic virus.