

movement will be limited by average yield performance and susceptibility to shattering in that area of the state.

Milling and baking quality. Overley has outstanding milling and baking quality. Kernel diameter, as measured by Single Kernel Characterization System (SCKS), has typically been 0.2 mm greater than Jagger. Due to its large seed, Overley has had higher flour yields at lower ash contents than Jagger. In 4 years of bake tests, the flour protein content of Overley has been slightly lower to equal to that of Jagger, but mix times and tolerances of Overley have been superior to Jagger. Bake absorptions of Overley have been nearly identical to Jagger, and Overley has typically had higher loaf volume and similar crumb grain scores compared to Jagger.

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Overley Hard Red Wheat

OVERLEY 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 Overley was distributed to Kansas registered seed growers for fall planting in 2003. Foundation and registered seed will be available for fall planting in 2004. Overley is named for Carl B. Overley, who retired as Associate Professor of Agronomy and Foundation Seed manager at Kansas State University in 1987 after more than 41 years of service to Kansas agriculture.

Origin and development. Overley is a hard red winter wheat selected from the cross U1275-1-4-2-2/Heyne 'S'//Jagger. U1275 is a germplasm line from the USDA-ARS, Manhattan, with the pedigree TAM-107 *3//TA 2460. TA 2460 is an accession of *Aegilops tauschii* that carries the leaf rust resistance gene *Lr39*. Heyne is a hard white winter wheat and Jagger is a hard red winter wheat, both released from the Kansas Agricultural Experiment Station. The three-way cross was made in the greenhouse in fall of 1993, and Overley was selected as an F₄-derived head row at Manhattan in 1998 and tested as KS940786-6-7. In 1999, KS940786-6-7 was entered in the "short-row" yield trial, an unreplicated test grown at Manhattan and Hutchinson, Kansas. Based on performance, it was advanced to the "preliminary yield trials" at Hutchinson and Manhattan in 2000. In 2001, KS940786-6-7 was tested in the Advanced Yield Trials at six sites across Kansas (Manhattan, Gypsum, Hutchinson, Hays, Colby, and Tribune) and was advanced to

the Kansas Intrastate Nursery, an elite test grown at 17 locations in Kansas in 2002 and 2003. This line also was tested in the Southern Regional Performance Nursery in 2002 and 2003 and was released as “Overley” by the Kansas Agricultural Experiment Station in July 2003. The development of Overley was supported by Kansas wheat producers’ check-off dollars administered by the Kansas Wheat Commission. The Kansas Crop Improvement Association provided partial support for the development of Overley.

Agronomic characteristics. Overley is a bronze chaffed, semi-dwarf hard winter wheat, most closely resembling Jagger. It is medium in height with very good straw strength and excellent yield potential. Overley is early maturing, heading a half day earlier than Jagger, and it has test-weight patterns superior to Jagger. Overley has fair to good winterhardiness and is characterized by large seed. It also has a medium-long coleoptile. The agronomic characteristics of Overley are summarized in Table 1.

Resistance to pests. Overley has been highly resistant to leaf rust throughout its testing, though some newer, rare races are virulent. Overley is resistant to soilborne mosaic virus and spindle streak mosaic virus. It is also moderately resistant to stem rust, speckled leaf blotch, and tan spot and moderately tolerant to tolerant to acid soils and wheat streak mosaic virus. Overley is moderately susceptible to powdery mildew and susceptible to Fusarium head blight, greenbug, Russian wheat aphid, and Hessian fly. Overley’s pest reactions are listed in Table 1.

Area of adaptation. Overley is best adapted to central and eastern Kansas, where its yields have been superior to Jagger and 2137 (Table 2). Its speckled leaf blotch and tan spot resistance make it suitable for continuous wheat production. It has sufficient tolerance to acid soils to grow in areas where that is a concern. Overley is intended as a replacement for Jagger in central and eastern Kansas. In more northern areas of the state, winterhardiness can become an issue and its susceptibility to scab is a concern in the eastern areas of the state. Its westward

Table1. Agronomic and pest resistance characteristics of Overley.

	Maturity	Test Weight	Winter-hardiness	Coleoptile Length	Lodging Resistance	Powdery Mildew	Leaf Rust	Stem Rust	Speckled Leaf Blotch	Tan Spot	SBMV	WSMV	Hessian Fly
Overley	1	3	5	4	4	7	4	4	4	3	1	4	9
Jagger	1	5	5	5	5	7	8	3	3	3	1	4	9
2137	4	5	3	6	3	4	7	7	4	4	1	4	4

Maturity: 1 = early, 9 = late

Test weight: 1 = High, 9 = Low

Winterhardiness: 1 = winterhardy, 9 = tender

SBMV – Soilborne mosaic virus

WSMV – Wheat streak mosaic virus

Coleoptile length: 1 = long, 9 = short

Lodging: 1 = stand well, 9 = tends to lodge

Disease and Insect Ratings: 1 = Resistant, 9 = Susceptible

Table 2. Yield of Overley and checks at Central and Eastern Kansas locations from 1999-2003.

Locations include Belleville, Hazelton, Caldwell, Hutchinson, Hesston, Gypsum, Manhattan, Everest, and Parsons.

	5-year Central and Eastern Kansas averages (bu/a)	Average test weights from Central and Eastern Kansas (lbs/bu)
Overley	65.8	58.6
Jagger	55.1	56.5
2137	53.7	55.6