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## CC178B Revised 1993 Crop Varieties Suggested for Nebraska 1993-1994

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JULY 1993

Nebraska Cooperative Extension CC 178B  
(Revised July 1993)

# Crop Varieties

## Suggested for Nebraska 1993-94

(Experiment Station Releases)

- **SMALL GRAINS**
- **SOYBEANS**
- **ALFALFA**
- **OTHER LEGUMES**
- **GRASSES**
- **DRY BEANS**
- **OTHER CROPS**

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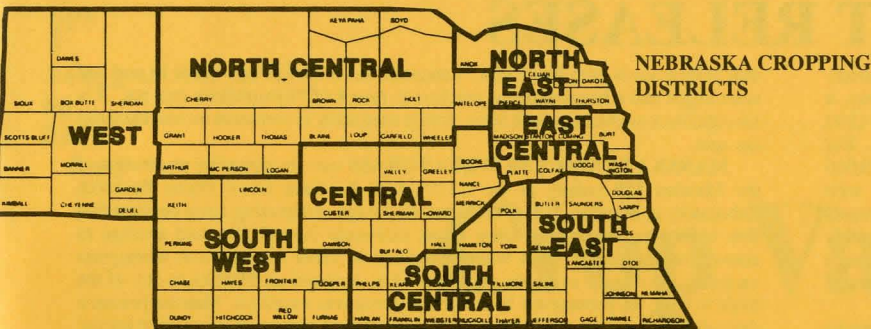
# Know the Seed You Plant! Certified Seed Assures Purity and Quality

Many good privately developed brands, varieties or closed pedigree hybrids are available.

Cropping District	Winter Wheat	Oats	Spring Barley	Soybeans		Alfalfa <sup>6</sup>
Northeast (NE)	Arapahoe Centura <sup>1</sup> Rawhide Redland Siouxland <sup>1</sup>	Don Hazel Ogle Premier Settler	Hazen Robust	Chapman Hack Holt Kenwood Sturdy		Perry Wrangler
East Central (EC)	Arapahoe Centura Rawhide Redland Siouxland	Don Hazel Ogle Premier Settler	Hazen Robust	Burlison Chapman Dunbar Edison	Hobbit 87 <sup>5</sup> Kenwood Resnik	Perry Riley Wrangler
Southeast (SE)	Arapahoe Karl Karl 92 Rawhide Redland Siouxland	Don Hazel Ogle Premier Settler	Hazen Robust	Corsica Dunbar Edison	Flyer Hamilton Hobbit 87	Perry Riley Wrangler
South Central (SC)	Arapahoe Centura Karl Karl 92 Rawhide Redland Siouxland TAM 107 Vista	Don <sup>2</sup> Hazel <sup>2</sup> Ogle <sup>2</sup> Premier <sup>2</sup> Settler	Hazen Robust	Corsica Dunbar Edison Flyer	Hamilton Hack Hobbit 87 <sup>5</sup> Resnik	Perry Riley Wrangler
Central (C)	Arapahoe Centura Rawhide Redland Siouxland Vista	Don <sup>2</sup> Hazel <sup>2</sup> Ogle <sup>2</sup> Settler Premier <sup>2</sup>	Hazen Robust	Chapman Dunbar Hack <sup>4</sup> Holt	Hobbit 87 <sup>5</sup> Lancaster Kenwood	Perry Riley Wrangler
North Central (NC)	Arapahoe Buckskin Centura Rawhide Redland Siouxland			Chapman Hack Holt Kenwood Sturdy		Perry Wrangler
West (W)	Arapahoe Buckskin Centura Rawhide Redland Siouxland TAM 107	Don <sup>2</sup> Hazel <sup>2</sup> Ogle <sup>2</sup> Russell <sup>3</sup> Settler Premier <sup>2</sup>	Bowman Hazen Robust Stark Steptoe <sup>3</sup>			Perry Riley Wrangler
Southwest(SW)	Arapahoe Centura Karl Karl 92 Rawhide Redland Siouxland TAM 107 Vista	Don <sup>2</sup> Hazel <sup>2</sup> Ogle <sup>2</sup> Starter <sup>2</sup> Premier <sup>2</sup> Settler	Hazen Robust	Burlison Chapman Dunbar Hack <sup>4</sup> Kenwood Resnik		

<sup>1</sup>Less winter hardy than Redland. <sup>2</sup>For both irrigated and non-irrigated land. <sup>3</sup>For irrigated land. <sup>4</sup>Primarily for irrigated land. <sup>5</sup>Primarily for irrigated land and/or high production environments and narrow rows. <sup>6</sup>See NebGuide G77-357 *Selecting Alfalfa Varieties for Nebraska*.

Circulars giving performance data for alfalfa, corn, grain sorghum, proso, small grains, and soybeans are available from your County Educator.



# PLANT VARIETY PROTECTION

The U.S. Plant Variety Protection Act became law in 1970. It gives the originating plant breeder or owners the right to protect (by controlling marketing) new varieties of sexually reproduced crops. This gives rights similar to those granted to inventors under the Patent Act. It covers plants that are reproduced from seed. Asexually reproduced plants (from cuttings, etc.) were protected under patent since 1930. First generation hybrids are exempt from this Patent Act.

Protection of new products in plant breeding assures seed users that the improved varieties are clearly identifiable. This also prevents varieties from being sold under another name. Plant breeders would receive more credit for their developments. They would also have a greater opportunity to recover their costs of varietal research. This is of primary importance to private plant breeders.

In order to be protected a variety must be novel. A variety in order to be novel by definition must be: distinct, uniform, and stable. Developers have one year to apply for protection. This protection period is for 18 years.

Two types of protection are offered under the law. Under the first option the owner may exclude others from selling seed of a variety without permission, through licensing or royalty agreements. He can enforce violations by filing suits in court to recover damages. Under the second option, the owner specifies that the variety can only be sold as a class of certified seed. Violations are subject to prosecution under the Federal Seed Act and Nebraska Seed Law.

The regulations do not affect the marketing of grain that is not intended for use as seed. Farmers can save seed of a protected variety from their production for use on their own farms.

The Nebraska Agricultural Research Division has protected recent wheat variety releases and they can be sold only as a class of certified seed. Many private plant breeders have elected to protect their materials under the certification option.

Protected varieties (or those for which protection has been applied) include the following:

## PLANT VARIETY PROTECTION

Winter Wheat	Soybean	Alfalfa
Arapahoe	Burlison	Riley
Centura	Chamberlain	Wrangler
Cody	Chapman	
Colt	Charleston	<b>Barley</b>
Karl	Conrad	Robust
Karl 92	Corsica	
Redland	Dunbar	<b>Oats</b>
Siouxland	Edison	Horicon
TAM 107	Flyer	Prairie
Vista	Hack	Starter
	Hamilton	
<b>Spring Wheat</b>	Harper 87	<b>Red Clover</b>
Guard	Hobbit 87	Kenstar
James	Kenwood	
	Resnik	<b>Grasses</b>
		Rebound
	<b>Dry Bean</b>	Retain
	Chase	Vantage
	Harris	
	Olathe	
	Starlight	

Other Legumes		Dry Beans	
Crop and Variety	Area of State Adaptation	Crop and Variety	Area of State Adaptation
Sweetclover Goldtop Madrid	Entire	Great Northern Emerson Harris Starlight Tara <sup>6</sup> 1140/067	W, SW & NC W, SW & NC W, SW & NC W, SW & NC W, SW & NC
Red Clover Arlington Kenland Kenstar	East and wet meadows	Pinto Olathe UI 114 Othello	W, SW & NC W, SW & NC W, SW
Birdsfoot Trefoil Carroll Dawn Empire Norcen	East and wet meadows		
Vetch Madison	Entire		
Crownvetch Emerald Penngift	East East		
Grasses		Other Crops	
<b>Cool-season:</b>		<b>Crop and Variety</b>	<b>Area of State Adaptation</b>
Smooth Brome Lincoln, Lyon, Rebound		Foxtail millet German R Golden German SnoFox White Wonder	Entire Entire Entire Entire
Orchardgrass Napier, Sterling		Proso Dawn Rise Sunup	Entire Entire Entire
Reed Canarygrass Rise, Vantage		Rye Cougar Rymin	Entire Entire
Wheatgrass: crested—Nordan, Ruff, Hycrest intermediate—Slate tall—Platte western—Barton, Flintlock		Spring wheat Guard James Stoa Butte 86 Prospect Shield	W, NC & NE W, NC & NE W, NC & NE W, NC & NE W, NC & NE
Creeping Foxtail Retain, Garrison		Sudan Piper Wheeler	Entire Entire
<b>Warm-season:</b>		Triticale Newcale	Entire
Moderately late maturing big bluestem—Champ eastern gamagrass—Pete indiangrass—Holt little bluestem—Camper prairie sandreed—Goshen, Pronghorn sand bluestem—Goldstrike sand lovegrass—Nebr. 27 side-oats grama—Butte switchgrass—Nebr. 28		Winter barley Dundy Hitchcock Perkins	SW, SC & SE SW, SC & SE SW, SC & SE
Late maturing big bluestem—Kaw, Pawnee, Rountree little bluestem—Aldous, Blaze, Cimmaron indiangrass—Nebr. 54, Oto, Rumsey side-oats grama—Trailway switchgrass—Cave-In-Rock, Trailblazer			

# RECENT RELEASES

**CHARLESTON SOYBEAN** is a mid-Maturity Group III determinate variety about one day later than Hobbit 87. In the 1989-90 Uniform Group III Tests, it (tested as HC85-6724) was 3.8 bu/A higher in yield than Hobbit 87 while in 1992 Nebraska trials it was equal or superior in performance at all testing sites. For optimum production, this variety should be solid-seeded in 7-inch rows at 270,000 viable seeds/acre. Charleston is slightly taller in height than Hobbit 87 with excellent standability. It is susceptible to phytophthora root rot. At bloom, plants have purple flowers and tawny pubescence. At maturity, pods contain moderately small seeds with black hila. Hypocotyl score (emergence) and shattering resistance are good. Charleston was developed at the Ohio Agricultural Research and Development Center, in cooperation with the USDA-ARS.

**CHASE PINTO BEAN** is a very promising line developed by the Nebraska Agricultural Research Division. Chase is a moderately early (about four days later than U.I.114), small vine type variety. It has high resistance to common blight and rust, plus some avoidance of white mold due to a moderately porous plant canopy. It shows a delayed, mild susceptible reaction to Bean Common Mosaic Virus NY-15 (Zaumeier strain) but is susceptible to NY-15 (Providenti strain). In Nebraska trials, Chase has been in the top yield group for three years. Seed size and shape are similar to U.I.114 and Othello.

**CORSICA SOYBEAN** is an early Maturity Group IV variety about 1 day later than Flyer and three days later than Edison. Corsica (tested as Md85-5443) was the highest yielding line in the national maturity group IV test in 1989-90. Results to date indicate Corsica is adapted to row spacings of 30" or less and can be used for dryland or irrigated sites. It has an indeterminate growth habit and is medium in height with very good standability. Corsica is susceptible to phytophthora root rot and soybean cyst nematode. At bloom, plants have purple flowers and tawny pubescence. At maturity, tan pods contain medium sized seeds with dull seed coats and gray hila (range from black to buff). Protein content is above average.

**DUNBAR SOYBEAN** is a mid-Maturity Group III variety with maturity similar to Resnik. In the 1989-90 Uniform Group III Tests, it (U85-74089) was equal to Resnik in yield; while in Nebraska trials, it is superior in performance over all the environments. Dunbar has an indeterminate growth habit, medium plant height with a moderately bushy canopy and excellent standability. It is resistant to races 1 and 7 of phytophthora root rot, pod & stem blight, and soybean mosaic virus with good tolerance to iron deficiency chlorosis. Dunbar is moderately tolerant to bacterial blight but susceptible to purple seed stain and brown stem rot. At bloom, plants have purple flowers and gray pubescence. At maturity, brown pods contain medium sized shiny yellow seeds with imperfect black hila. Hypocotyl score (emergence) and shattering resistance are good. Protein content is above average for Group III varieties.

**HOLT SOYBEAN** is an early Maturity Group II variety about 2 days earlier than Kenwood and 1 day later than Sturdy. In Uniform Group II trials (1989-91) and Nebraska variety trials, Holt (tested as U87-63041) has shown competitive performance and good yield stability. It is adapted for use in all row spacings under either dryland or irrigated conditions. Holt has an indeterminate growth habit and moderately short plant height with very good standability. It is susceptible to phytophthora root rot, pod & stem blight, soybean mosaic virus, purple seed stain, brown stem rot, and bacterial tan spot. At bloom, plants have white flowers and gray pubescence. At maturity, brown pods contain medium sized dull yellow seeds with buff hila. Hypocotyl score (emergence) is good and shattering resistance is moderately good.

**JULES HARD RED WINTER WHEAT** (tested as C0860094) is a medium height, medium late maturing variety developed by the Colorado Agricultural Experiment Station. It was derived from the cross NE76667 x Hawk. Jules was released to certified seed growers in the fall of 1992. Compared to Yuma, it is described by the developer as superior for yield, winterhardiness, coleoptile length and leaf rust resistance. Jules is a genetically lower test weight wheat. According to limited regional trials, Jules is resistant to stem rust, has an intermediate reaction to leaf rust and is susceptible to Hessian fly and soil borne mosaic. Winterhardiness is described as fair. Milling and baking properties are acceptable.

**KARL 92 HARD RED WINTER WHEAT** (tested as KS83-1374-142) is a very early maturing, moderately short statured variety developed by the Kansas Agricultural Experiment Station. It was selected from a head row increase of Breeder seed of Karl. Karl 92 is slightly darker green than Karl at anthesis and more uniform at heading. It is adapted to the same areas and production environments where Karl has been successful. Karl 92 has good tolerance to leaf rust, stem rust (QCC race), powdery mildew, tan spot, septoria tritici, septoria nodorum, bacterial leaf blight, soil borne and spindle streak mosaic virus. It is susceptible to Hessian fly and wheat streak mosaic virus.

**LANCASTER SOYBEAN** is a Mid-Maturity Group III determinate variety similar in maturity to Resnik or about 1 to 2 days earlier than Hobbit 87. It was released primarily for its above average protein content and will be useful in situations where a very high protein meal is desired. Compared with Burlison (another high protein variety) in Nebraska trials (tested as U86-62062), Lancaster has comparable yield potential, is later maturing, has shorter plant height, similar lodging resistance, similar seed size, higher protein content and similar oil content. For optimum performance, this variety should be solid-seeded in 7-inch rows at 270,000 viable seeds/acre. Lancaster has excellent emergence. At bloom, flowers are purple. At maturity, tan pods with tawny pubescence contain moderately large

dull yellow seeds with black hila. Lancaster has moderate resistance to pod and stem blight and a heterogeneous reaction to race 4 of Phytophthora root rot. It is susceptible to soybean mosaic virus, purple seed stain, brown stem rot and bacterial tan spot.

**MANSKA PUBESCENT WHEATGRASS** was developed by reselection of the Mandan 759 variety at the USDA-ARS Northern Great Plains Research Laboratory at Mandan, N.D. The Nebraska forage and grazing trials confirm that this variety has superior grazing value, increased digestibility, and average to above average forage yield when compared to other intermediate wheatgrass varieties. No disease or insect problems have occurred on Manska in any of the trials to date. Its persistence in the grazing trial was excellent. Manska (name is derived from *mandan* and *Nebraska*) is the first cool-season grass released for use in the Great Plains that was evaluated in grazing trials prior to its release. Seed yields are similar to other intermediate wheatgrass varieties.

**MEYER CRAMBE** (*Crambe abyssinica Hochst*) is a cool season spring sown annual oil seed crop. It produces a non-edible oil used for industrial products. The growing season is about 90 days, similar to oats in planting and harvesting dates. Crambe plants are about three to four feet tall and produce white blossoms and tan seeds. The variety Meyer has good seedling vigor, very good standability, very acceptable oil content, and is well adapted to Nebraska production conditions.

**NEWCALE WINTER TRITICALE** was developed by the Nebraska Agricultural Research Division. Newcale is adapted primarily for use as a feed grain. Newcale will be competitive with winter wheat for grain yield when compared on a pounds per acre basis. Newcale's winterhardiness is similar to winter-tender wheat varieties such as Vona.

**PLAINSMAN AMARANTH** is a widely adapted variety released by the Rodale Research Institute and the Nebraska Ag Research Division for production and breeding purposes. Plainsman is one of the earliest maturing amaranth lines (about 110 days) with reddish, upright flowers. At maturity, plants may vary from three to nearly six feet in height, depending upon available moisture, and produce grain that is tan to nearly white in color.

**PRAIRIE OATS** was developed by the Wisconsin Agricultural Experiment Station and released to certified seed growers in 1992. According to the release statement, Prairie (tested as X5229-1) is a midseason maturing variety with light tan grain and fair test weight patterns. It has excellent tolerance to barley yellow dwarf virus, is moderately resistant to crown rust and loose smut, and moderately susceptible to stem rust. Plant height and straw strength are similar to Ogle. The pedigree is IL 75-5743 x Ogle. Prairie is widely adapted and has performed well in the North Central United States. Limited Nebraska performance data (1991-92) shows Prairie is competitive in yield with Ogle, with similar test weight and heads one to two days later.

**STARK BARLEY** is an F<sub>5</sub>-derived, spring, two-rowed selection from the cross ND7014/Bowman sib tested as ND9866 developed by North Dakota State University AES. The variety was released in January 1992 as a non-malting barley with adaptation to the Dakotas and eastern Montana. Stark has a lax spike (head) with semi-smooth awns. Kernels have long rachilla hairs and a white aleurone. Stark is classed as a feed barley having better yield, plumpness %, and test weight potential than Bowman under higher moisture conditions. It is one day later in maturity and has a lower protein content than Bowman. Stark showed excellent kernel plumpness in stressed and non-stressed tests. Stark is approximately 1" taller than Bowman with a slightly better lodging resistance. Stark is moderately resistant to net blotch and spot blotch, susceptible to smut and root rot, and highly susceptible to stem rust (race QCC). It is moderately resistant to leaf rust.

**VISTA HARD RED WINTER WHEAT** (tested as NE87615) is a short statured, medium maturity variety developed cooperatively by the Nebraska Agricultural Research Division and the USDA-ARS. Foundation seed was allocated to qualified certified seed producers in 1992. Vista is best adapted to the northern high plains region, especially under optimum management conditions. Plant height is moderately short (equal to TAM 107) and coleoptile length is very short. Maturity, test weight and straw strength are similar to Arapahoe. Winterhardiness is fair. Vista is moderately resistant to the currently prevalent races of leaf rust, stem rust and Hessian fly. Greenhouse screening indicates more tolerance to wheat streak mosaic virus than Brule or Redland. Milling and baking quality are acceptable.

**YUMA HARD RED WINTER WHEAT** (tested as CO850061) is an early maturing, short statured variety developed by the Colorado Agricultural Experiment Station. It was selected from the cross NS14/NS25/2\*Vona (NS14 and NS25 are Yugoslavian wheats). Yuma has heat tolerance during grain filling equal to TAM 107. It is well adapted to all of eastern Colorado where short coleoptile wheats have been successful. Compared to Vona, Yuma is similar in height, maturity, and winterhardiness with a slightly lower test weight pattern and larger seed size. Results from Colorado (1988-91) and USDA Southern Regional Performance Trial (1990) indicate that Yuma is comparable to TAM 107 and TAM 200 in yield. These tests also show it is about two days later than TAM 107 with fair straw strength and a very short coleoptile (60% of Scout 66). Yuma is moderately resistant to the wheat curl mite and Hessian fly and susceptible to leaf rust, stem rust (has Sr11 and Sr17), soil borne mosaic virus, and smut. In Wheat Quality Council small-scale evaluations, milling properties were acceptable and overall baking quality was below average.