FROM THE GROUND UP

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AGRONOMY NEWS

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TABLE OF CONTENTS

SELLING SEED IN COLORADO

The Colorado Seed Growers Association has developed a poster that gives information about selling seed in Colorado. The poster addresses Plant Variety Protection and lists common varieties of barley, beans, and wheat that are covered under the act. In addition, it lists weeds that are considered noxious under the state seed law.

The poster is 18" x 24" and printed in attractive colors on glossy paper. The small copy included in this mailing will give you an idea of what is covered (see back page). It is designed to be hung at farm supply stores, grain elevators, the local coffee shop, or Extension offices.

Copies of the poster are available at no cost from the Colorado Seed Growers Association at 303/491-6202.

▫Stanelle

FALL NITROGEN FERTILIZATION

Should we recommend fall applied nitrogen given the current climate of increasing environmental concern and regulation? Several states to our east have enacted restrictions on fall N fertilizer application, and it is generally not considered a Best Management Practice. However, even in states such as Nebraska and Minnesota where groundwater protection acts have been passed, there is still some flexibility in using fall applied N.

Farmers have benefited in the past from fall applied N because of cheaper fertilizer prices and the ability to spread out their work load. The belief was that a little loss over the winter was worth the savings. Now, we have to consider the environmental consequences of all of our recommendations. Fall applied N fertilizer has been related to groundwater contamination in areas with high fall and winter precipitation. While Colorado's semi-arid climate does not generally result in significant off-season leaching, fall N fertilization should be avoided on any highly leachable soil, especially where preplant or early season irrigation is practiced. Soils with a high potential leaching hazard can be defined as any site where the soil texture is coarse (sandy) and the depth to groundwater is less than 20 feet. If farmers are in doubt about the potential leaching hazard of their site, the District Conservationist at the local SCS Field Office has specific information on soil leaching potential.

Fall application of N can still be considered a safe practice as long as precautions are observed.

There may be economic and managerial benefits to applying N in the fall, but the environmental risks make this a poor choice on highly leachable soils. Partial application of N in the spring, followed by sidedress application improves crop N uptake efficiency and reduces N available for leaching.

Waiting until the crop is well established before applying the bulk of fertilizer allows producers to more accurately determine the crop yield potential and N needs. Poor stands or below average precipitation are good reasons to adjust N rates downward at sidedress time. Conversely, excellent conditions may warrant increased N at sidedress. This type of managerial flexibility offers producers economic benefits and helps to maintain water quality.

Fall application of inorganic and organic forms of N is generally considered to be environmentally safe on deep, fine textured soils (silt loam or heavier) in areas with low winter precipitation. Anhydrous ammonia applied when soil temperatures have dropped below 50° F will remain mostly in the NH_4^+ form over the winter and will not move appreciably downward. Nitrification inhibitors (N-Serve) can be used to further delay the conversion of NH_4^+ to NO_3^- under certain conditions. Farmers should consider using nitrification inhibitors, especially when it is not feasible to use split applications or other management techniques on leachable soils. However, nitrification inhibitors seldom produce a positive economic return to farmers and should not be used as a substitute for following other BMPs.

Fall application of fertilizer N is a practice which we can safely recommend to farmers as long as they observe the following precautions:

- Limit fall applications to heavier soils with good drainage.
- Base N rates on soil analyses and conservative yield projections.

- Credit all sources of available N when determining the fertilizer rate.
- Apply N after soil temperatures are below 50° F.
- Use ammonium forms of N and consider the use of a nitrification inhibitor.
- Do not fall fertilize excessively wet fields or sites overlying shallow, NO_3^- contaminated aquifers.

▫Waskom

THE SOYBEAN DIAGNOSTIC GUIDE

Several new publications are available either through the Bulletin Room or the Extension Agronomy office.

A copy of the Soybean Diagnostic Guide, Special Report No. 101, has been sent to each soybean production county in Colorado. This publication is provided by the American Soybean Association and is sponsored by eight chemical companies. It thoroughly describes soybean growth and development, disease, nematode damage, herbicide injury, insect damage, fertility problems, and environmental stresses with colored pictures and charts.

Single copies are available from the Extension Agronomy office at CSU (303/491-6201). Multiple copies can be ordered from the American Soybean Association (314/576-1770).

▫Croissant

CROP PRODUCTION AND PEST MANAGEMENT FIELD RECORD

Details are finalized concerning distribution of the ***CROP PRODUCTION AND PEST MANAGEMENT FIELD RECORDS***. With this mailing, each county is receiving a set of records in the format in which they will be marketed. This consists of one page of instructions and a FARM MAP diagram on the reverse side of that page. The remainder of the set consists of 12 four page layouts for recordkeeping. The FARM MAP diagram can be used for 1, 4, or 16 square miles. Farm fields should be drawn here and numbered as a permanent farm record. The four page layout contains places to record current crop information, tillage, residue, planting conditions, irrigation practices, fertilizer applications, and most importantly, pesticide information. Within the pesticide information section, there are specific items regarding RESTRICTED USE PESTICIDES which must be recorded according to the 1990 Farm Bill. The system is designed to use one four page layout per field per year. The authors will keep this form updated according to requirements mandated by the Farm Bill.

The Colorado State University Bulletin Room will handle all requests. The supply of these packages will be available the last of September in the Bulletin Room. Counties may order these record forms to keep on hand or process individual orders as they come in. The cost per package of twelve is $1.50.

Training meetings for Extension personnel are available on an "by area" basis if requested. Contact Bob Croissant (303/491-6201) for details.

▫Croissant

CANOLA PROSPECTS

Interest in canola is rapidly increasing in Colorado. In 1986, Colorado producers planted approximately 240

acres. In 1992, there were 410 acres in Colorado and in 1993, there were 4,000 acres. While this may seem small, Colorado's canola is the most rapidly expanding commercial crop in the western U.S. according to the president of the U.S. Canola Council. Because of research sponsored by industry and an aggressive Colorado Agricultural Experiment Station canola research program, in 1994 Colorado ranks as one of the nation's top canola states. The reason the canola industry is coming to Colorado has much to do with climate and the agricultural support they receive from researchers and producers.

Colorado's relatively moderate winters have been successful at producing dryland winter canola yields of 1,800 to 2,400 lbs/acre. The problem may be in establishment if soil moisture is low. Canola needs a firm seedbed with plenty of moisture but it does not tolerate standing water conditions. Canola should be planted ½ to ¾ inches deep. Everything from a grain drill to Gandy boxes have been used to plant canola at seeding rates of 5 to 1 0 pounds per acre. Generally, winter canola should be planted in Colorado by September 10 to achieve the "magic eight" leaf stage. The greatest problem in winter canola has not been winter kill but early spring warm weather (in February) when spring regrowth occurs before the final icy blasts in March. Even in a mild spring, you may decide the crop didn't make it but patience is usually rewarded with a sudden burst of new growth.

Canola appears to have a bright future here in Colorado.

Spring canolas appear to have more potential than the winter types in many respects. In Ft. Collins, we recommend planting the last week of March, about the time we plant barley. In the San Luis Valley, planting can occur anytime from the end of April to the end of May. Because of the long cool growing conditions of the SLV, higher yields and higher oil percentages can be expected in that area. Currently two canola oil companies have established in the San Luis Valley and are doing the major contracting. Two other vegetable oil companies have expressed interest in the High Plains and Western Slope areas. So, it appears we have a developing canola industry.

In light of that, the U.S. Canola Council and the High Plains Canola Council have been working to secure $500,000 for canola research and development from the federal government. These funds will be distributed via the Cooperative States Research Service's competitive grants. The development of High Plains-adapted canolas may well depend on these funds. To make things easier, Congress is also considering changes in the 1995 Farm Bill which could essentially provide a 0-100 replacement for the current 0-92 program option for deficiency payments. Of course, the other thing being considered by Congress is a 0-85 replacement program for non-oilseed production in lieu of the 0-92 option.

So, canola appears to have a bright future for Colorado. We have an excellent product, a well defined market, and an outstanding reputation. Our constraints will still be primarily in transportation and the lack of a local processing facility. However, the companies we in Colorado are dealing with have made some very attractive offers and for the time being, we can still see growth coming.

▫Johnson

1993 WINTER WHEAT VARIETY TRIAL RESULTS

In 1993, CSU winter wheat variety trials were conducted at nine dryland locations and three irrigated sites in eastern Colorado. The dryland Walsh site and irrigated Burlington site were not harvested because of poor stands and volunteer problems. Additionally, feed grain variety trials, involving winter wheat and triticale types, were conducted at five locations. Summaries of the high moisture, low moisture, irrigated winter wheat variety trials as well as feed grain variety trials are provided in separate tables. The tables contain yields for each variety at each location that a particular study was conducted. Varieties are shown in each table ranked (highest to lowest) according to average location yields. Additionally, grain test weight, stand survival, disease resistance, and lodging under irrigation are given in the tables (located at the end of this publication). Some of the Colorado (CO) experimental numbers are not reported because they will no longer be evaluated in our program. Producers are encouraged to carefully evaluate the data in each table, as there is a considerable amount of information.

If you additional need copies of the results published here, please call the Extension Agronomy office (303/491-6201).

Most of the 1993 growing season could perhaps be characterized as rather favorable for winter wheat growth as shown by the high average grain yields, particularly for the high moisture trials. The fall season began with generally favorable moisture conditions and winter temperatures were not extreme, and thus winter injury was not a problem. Moisture conditions were somewhat dry during early spring growth but were generally good during grain filling. Leaf rust injury was significant at the Burlington and Ovid sites. The major weather events which adversely impacted wheat production were hail storms during June, which severely affected some regions of the state.

The following discussion is a summary of the 1993 results. The semidwarf varieties such as TAM 107 and TAM 200 still continue to produce consistently high yields across the state. TAM 107 possesses many desirable agronomic traits such as emergence strength, winter hardiness, straw strength, earliness, stress tolerance, and resistance to vectors of the wheat streak mosaic virus. Its major deficiencies continues to be lack of resistance to leaf rust and marginal baking quality. The leaf rust disease is primarily a potential problem only in the northeastern portion of the state and under irrigation. The varieties TAM 200, Yuma, and Vona possess high yield potential, with their major weakness being somewhat marginal winter hardiness and emergence ability. The variety Jules also exhibited high yield potential, but should only be planted in late-maturing areas because of its propensity to produce low test weight grain. The semidwarf variety Vista, a recent release from Nebraska, also appears to show potential and should be watched closely as a TAM 107 replacement for some acreage in northeastern Colorado. The taller varieties Sandy and Lamar are not as productive as the semidwarfs, but would be good choices where residue production and emergence ability are important considerations. Regarding the commercial varieties in the table, the older Agripro variety Hawk and the Quantum hybrids continue to show good performance over a wide region of the state. The newer Agripro varieties Laredo, Longhorn, and Ogallala also showed encouraging performance. Results from the irrigated trials are rather limited

because of the hail damage at Walsh and the volunteer problems at Burlington and thus recommendations from the 1993 data should be used with caution. However, over the years TAM 200 and Yuma have been consistent producers under irrigation. Finally, your attention should be directed to the performance of the Russian wheat aphid resistance lines (lines with the RWA prefix) in these trials. None of these lines proved to be top producers in the trials. However, we will continue to evaluate some of the same lines along with new lines next year. Nothing will be released as a variety for this year.

With regard to feed grain variety trial performance, some of the winter triticale varieties and the experimental performed rather poorly. However, the triticale varieties Presto, Newcale, and Lasko performed as well as TAM 107 across eastern Colorado. However, Presto appears to have the most winterhardiness and this is consistent with 1992 results, suggesting the variety Presto appears to be well adapted to eastern Colorado conditions. However, this variety is not currently available for widespread production, as only a limited supply of seed is available for foundation seed production this fall.

▫Quick and Shanahan

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ERRATA

In the July 1993 issue of ***From the Ground Up***, please refer to "Wheat Test Weight Decline" starting on page 5. On page 6, line 2: Wheat testing 57 lbs per bushel must be graded US No. 3, because of low test weight. Dockage received on this wheat, received by farmers, will depend on the local elevator. US No. 1 winter wheat must test at least 60 lbs per bushel and winter wheat testing US No. 3 must weigh less than 58 lbs per bushel. US No. 1 and 2 spring wheat must test 58 and 57 pounds per bushel respectively.

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Sincerely,

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1993 EASTERN COLORADO WINTER WHEAT HIGH MOISTURE VARIETY TRIAL

VARIETY NAME	LOCATION YIELDS AKRON	BENNETT	BURLINGTON	GENOA	OVID	YLD AVG	YIR* AVG	TW AVG	PL HT AVG	L R** AVG	HAIL*** AVG
	BU/AC						%	LB/BU	INCHES	(0-9)	%
[illegible]ANTUM 549	62.6	79.8	75.0	57.4	66.4	68.2	111	57.7	36	1	5.0
CO880169	57.2	73.5	72.4	59.4	66.5	65.8	108	58.6	34	2	0.0
CO880210	61.7	70.1	67.3	57.6	63.8	64.1	105	59.4	31	6	5.0
CO890065	61.2	61.7	75.0	53.4	68.2	63.9	105	59.7	32	3	5.0
CO890323	62.6	74.1	66.3	57.0	60.1	64.0	105	60.2	36	2	5.0
VISTA	55.6	70.0	68.7	60.8	65.3	64.1	105	58.3	32	1	0.0
CO900166	57.2	74.2	70.5	52.4	64.4	63.7	104	59.8	33	1	0.0
AGRIPRO HAWK	61.7	74.6	70.1	52.0	60.3	63.7	104	58.9	34	4	5.0
TAM 200	61.3	75.4	71.2	49.4	63.2	64.1	104	59.5	31	1	5.0
AGRIPRO LAREDO	55.0	67.7	80.4	53.3	62.0	63.7	104	59.6	33	0	5.0
JULES	59.4	73.9	67.4	53.7	62.9	63.5	104	57.0	32	1	0.0
VONA	63.4	71.4	69.8	54.9	56.1	63.1	103	60.8	33	3	5.0
TAM 107	57.1	73.1	67.9	56.0	60.9	63.0	103	58.8	33	7	5.0
CO880240	63.3	65.2	68.6	54.2	61.5	62.6	102	58.4	36	2	5.0
YUMA	61.6	67.8	77.1	49.8	58.1	62.9	102	58.0	31	1	10.0
AGRIPRO LONGHORN	51.2	66.9	70.6	55.4	65.4	61.9	101	60.0	38	1	5.0
KS90RC10	57.1	68.5	67.1	52.7	63.6	61.8	101	58.7	32	0	5.0
[illegible]APAHOE	55.0	64.8	70.5	48.5	67.8	61.3	100	57.3	35	2	5.0
[illegible]RIPRO OGALLALA	56.0	69.8	70.6	51.2	60.8	61.7	100	59.6	32	1	10.0
CO880054	54.9	73.5	65.6	51.6	61.5	61.4	100	58.5	34	4	10.0
CO900134	57.0	65.6	73.7	50.2	60.0	61.3	100	58.4	33	1	5.0
QUANTUM 562	53.0	66.4	70.1	49.8	68.7	61.6	100	57.4	35	2	5.0
CO900777	56.5	68.5	72.5	48.5	57.2	60.6	99	58.9	37	1	5.0
CO890446	55.2	71.4	69.6	50.6	53.8	60.1	98	59.6	32	3	5.0
CO890128	55.5	66.7	67.5	50.7	59.5	60.0	98	57.9	34	1	5.0
TAM 202	58.6	65.2	70.6	51.6	52.4	59.7	97	59.2	31	1	10.0
RWAE5W	54.5	71.5	60.9	56.4	53.2	59.3	97	58.3	31	5	5.0
SANDY	59.2	66.1	64.4	50.5	55.0	59.0	96	58.6	39	3	5.0
IKE	49.8	60.9	68.8	50.3	62.0	58.4	95	59.0	34	2	2.5
RAWHIDE	52.2	67.8	65.9	48.4	56.9	58.2	95	58.4	36	2	10.0
LAMAR	55.7	65.1	64.6	47.1	51.3	56.8	92	59.1	39	1	5.0
SCOUT 66	55.4	64.5	62.0	48.1	49.0	55.8	91	58.9	41	3	5.0
WICHITA	46.9	50.2	46.6	47.3	25.7	43.3	71	59.5	43	2	50.0
AVERAGE	57.1	68.7	68.8	52.4	59.5	61.3	100	58.8	34	2	6.4
LSD (.05)	8.3	7.5	7.9	6.1	5.3						

* [illegible] index ratio determined by dividing entry yield by location average yield.
**Leaf rust (LR) scale 0-9, with 1 having least infestation and 9 most. Leaf rust readings taken at Burlington and Ovid.
***Hail damage evaluations were made at Ovid.

1993 EASTERN COLORADO WINTER WHEAT LOWER MOISTURE VARIETY TRIALS

VARIETY NAME	LOCATION YIELDS			YLD	YIR*	TW	PL HT
	BRIGGSDALE	LAMAR**	SHERIDAN LAKE	AVG	AVG	AVG	AVG
	BU/AC				%	LB/BU	INCHES
TAM 200	46.7	33.5	30.0	36.7	122	58.0	28
CO890065	43.4	33.0	31.6	36.0	120	58.5	29
CO880210	43.3	28.8	29.0	33.7	111	57.0	30
QUANTUM 549	39.6	28.6	29.1	32.4	108	56.4	33
AGRIPRO HAWK	34.7	31.7	29.2	31.9	108	56.6	33
CO880054	37.4	30.0	28.9	32.1	108	57.4	31
KS90RC10	43.2	27.4	27.2	32.6	107	55.6	29
SANDY	42.5	28.7	25.4	32.2	106	59.2	36
CO880240	39.7	29.3	26.9	32.0	106	56.5	34
TAM 107	41.8	26.7	27.4	32.0	105	56.4	30
CO880169	42.3	27.5	26.1	32.0	105	56.4	33
CO900764	38.7	29.0	26.4	31.4	104	55.7	35
VONA	38.7	27.4	27.1	31.1	103	57.1	29
LAMAR	35.9	28.9	26.2	30.3	102	57.9	35
CO900366	37.8	26.0	27.0	30.3	101	56.8	34
QUANTUM 542	39.4	27.2	24.4	30.3	100	57.1	37
RWAE9	41.5	25.1	24.9	30.5	100	56.2	34
YUMA	42.9	22.3	26.2	30.5	99	56.1	29
CO900314	41.1	24.0	23.0	29.4	96	57.7	35
CO890323	38.4	26.1	22.5	29.0	95	58.3	33
CO900777	39.7	23.0	23.5	28.7	94	57.5	35
TAM 202	38.0	19.4	23.1	26.8	87	54.9	30
BACA	33.8	24.8	18.2	25.6	84	57.3	39
RWAE10W	33.9	17.5	21.3	24.2	79	56.6	34
RWAE3T	30.5	17.2	22.3	23.3	77	55.1	33
WICHITA	26.8	23.8	15.3	22.0	73	56.5	39
AVERAGE	38.9	26.4	25.5	30.3	100	56.9	33
LSD (.05)	5.0	3.9	3.8				

*Yield index ratio determined by dividing entry yield by location average yield.
**Yields at Lamar were reduced by hail prior to harvest.

1993 EASTERN COLORADO WINTER WHEAT IRRIGATED VARIETY TRIAL

VARIETY NAME	LOCATION YIELDS FT COLLINS	LOCATION YIELDS WALSH	YLD AVG	YIR* AVG	TW** AVG	PL HT AVG	L R*** AVG	HAIL**** AVG
	BU/AC			%	LB/BU	INCHES	(0-9)	%
CO900914	74.4	52.5	63.5	114	63.3	40	0	10.0
CO880169	75.7	51.5	63.6	114	60.7	42	3	10.0
AGRIPRO LAREDO	70.1	53.2	61.7	112	63.0	36	1	7.5
CO880210	71.3	52.2	61.8	112	62.5	38	8	20.0
KS90RC10	71.0	51.7	61.4	111	60.8	39	0	5.0
CO900166	72.6	49.9	61.3	110	61.9	39	3	5.0
TAM 200	60.2	57.9	59.1	110	62.4	35	1	3.5
QUANTUM 589	67.5	52.6	60.1	109	62.1	35	1	7.5
TAM 107	68.7	51.2	60.0	109	60.5	38	8	7.5
AGRIPRO TOMAHAWK	75.6	45.5	60.6	107	62.5	38	0	25.0
CO900134	73.5	46.5	60.0	107	62.4	42	7	15.0
CO880054	79.7	42.1	60.9	107	60.7	37	2	27.5
CO900138	64.4	50.8	57.6	105	62.2	38	5	10.0
AGRIPRO OGALLALA	68.0	44.6	56.3	101	63.2	36	1	20.0
AGRIPRO HAWK	67.9	44.4	56.2	100	61.5	39	5	10.0
CO890128	63.3	47.2	55.3	100	59.3	41	2	12.5
JULES	65.7	43.6	54.7	98	58.7	39	1	3.5
YUMA	69.4	40.3	54.9	97	60.9	39	4	42.5
CO900333	67.6	37.8	52.7	93	63.6	40	8	30.0
CO890446	68.8	36.3	52.6	92	61.8	40	5	37.5
CO900346	71.3	34.4	52.9	92	62.2	43	5	42.5
VONA	59.8	41.1	50.5	91	61.5	37	4	27.5
AGRIPRO PONDEROSA	63.0	35.8	49.4	87	63.5	37	0	50.0
TAM 202	71.6	29.8	50.7	87	61.8	36	1	42.5
CO900351	67.2	32.4	49.8	86	60.7	45	3	57.5
QUANTUM 562	53.4	41.3	47.4	86	61.0	38	1	15.0
CO900808	61.0	32.9	47.0	82	61.9	45	0	35.0
CO900366	55.5	34.5	45.0	80	63.2	41	2	47.5
AVERAGE	67.8	44.1	55.9	100	61.8	39	3	22.4
LSD (.05)	11.4	4.3						

*Yield index ratio determined by dividing entry yield by location average yield.
**Test weight was taken at Ft. Collins only.
***Leaf rust (LR) scale 0-9, with 1 having least infestation and 9 most. Leaf rust readings taken at Ft. Collins only.
****Hail damage evaluations were made at Walsh.

1993 EASTERN COLORADO WINTER FEED GRAIN VARIETY TRIAL

	LOCATION YIELDS					YLD	YIR*	TW	PL HT	L R**
	AKRON	BURLINGTON (I)	BURLINGTON (D)	OVID	SHERIDAN LAKE	AVG	AVG	AVG	AVG	AVG
VARIETY NAME	LB/AC						%	LB/BU	INCHES	(0-9)
PRESTO TRITICALE	3668.7	2048.6	5182.3	4428.2	1496.4	3364.8	119	51.1	43	0
NEWCALE TRITICALE	3089.6	1868.9	4424.9	4388.3	1025.7	2959.5	105	49.4	44	0
LASKO TRITICALE	3168.1	1880.1	4067.8	3796.3	1360.0	2854.5	101	47.8	45	0
TAM 107 WHEAT	2847.4	1756.1	4287.0	3609.8	1397.0	2779.5	98	56.6	33	7
PASTA TRITICALE	2765.6	1723.7	3631.6	3936.6	1055.3	2622.6	93	48.1	48	0
KS89T139 TRITICALE	2498.2	1410.6	3359.8	3538.6	1185.2	2398.5	85	41.0	47	0
AVERAGE	3006.3	1781.3	4158.9	3949.6	1253.3	2829.9	100	49.0	43	1
LSD (.05)	274.4	299.5	587.1	321.3	263.7					

*Yield index ratio determined by dividing entry yield by location average yield.

**Leaf rust (LR) scale 0-9, with 1 having least infestation and 9 most. Leaf rust readings taken at Burlington dryland only.

ATTENTION

Seed is a vastly important input in production agriculture. To insure that Colorado farmers know the quality of the seed they are planting, the Colorado State Seed Law provides certain safeguards on any seed sold for planting in the state. All seed sold or offered for sale in Colorado must display a current seed tag stating germination and purity.

The Plant Variety Protection Act provides an exclusive right to the breeder to produce and market for planting purposes a variety that has been developed. Some of these protected varieties are covered under Title V of the act which states seed of the variety may only be sold as a class of certified seed.

Common crop varieties sold in Colorado that are PVP protected or under

WHEAT

A99ar*
Centennial*
Hawk*
Mustang*
Sierra*
TAM 202*
WB 803*
WB Baker*
Abilene*
D-5003*
Jules*
Newton*
Stallion*
Thunderbird*
WB 881*
WB Express*
Arapahoe*
Durex*
Klasic
Nordic*
Stockholm*
Victory*
WB 883*
WB Nomad*
Bergen*
Fjeld*
Longhorn*
Oslo*
TAM 107
Vona*
WB 906R*
Wings*
Bronco*
Fjord*
Mesa*
Sandy*
TAM 109*
Waco*
WB 926*
Yuma*

The State Seed Law also lists noxious weeds, which are considered particularly undesirable in seed. No seeds of a prohibited noxious weed are allowed in seed for sale, while the number of restricted noxious weed seeds must be listed on the label.

PROHIBITED (primary)

Purple Loosestrife
Sorghum alum
Sowthistle, perennial
Spurge, leafy
St. Johnswort
Thistle, Canada
Thistle, Scotch
Whitetop
Whitetop, hairy
Whitetop, tall

RESTRICTED (secondary) NOXIOUS WEEDS

Dock, curly
Dodders
Fanweed
Groundcherry, purpleflower
Lettuce, blue
Mustards
Wild Mustard
Oat, wild
Plantain, Buckhorn
Povertyweed, mouse-ear
Puncturevine
Quackgrass

Certified seed is produced under strict management practices and monitored by the Colorado Seed Growers Association. Three classes of seed are recognized:

Foundation (white tags)