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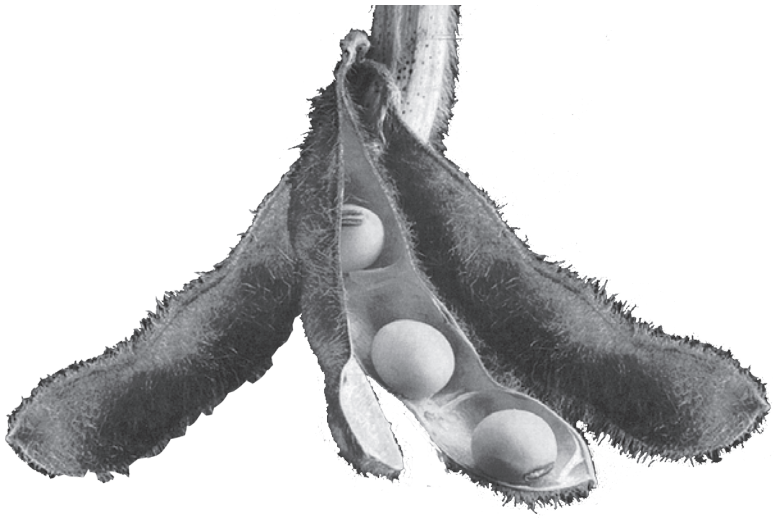
Agricultural Experiment Station

College of Agricultural Sciences
Department of Soil and Crop Sciences
Arkansas Valley Research Center
Extension



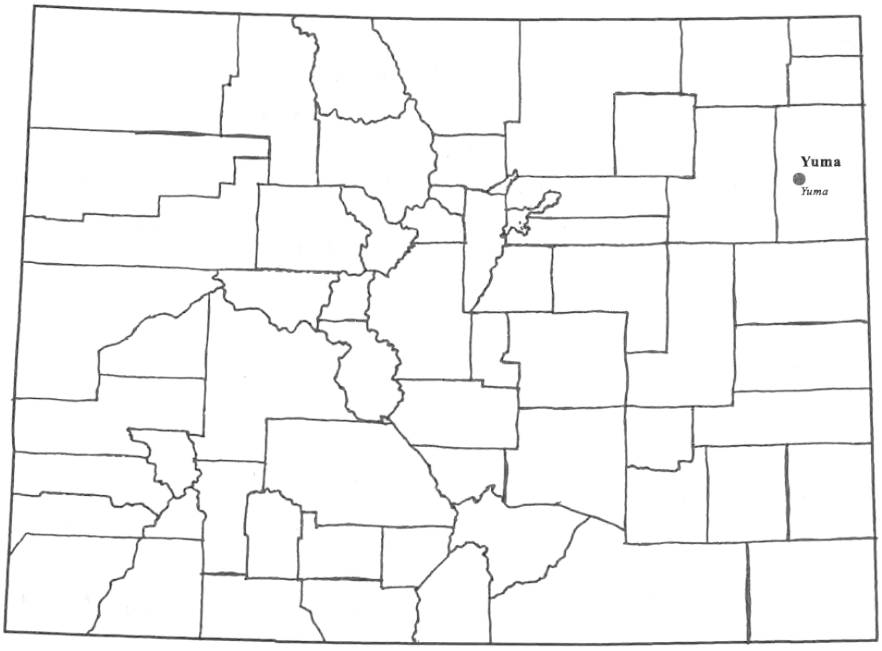
MAKING BETTER DECISIONS

1999-2008 Colorado Soybean Variety Performance Trials

Acknowledgments

The authors express their gratitude to Bob Taylor, our 2008 collaborating Yuma farmer, who, over the last four years has generously contributed the use of his land, equipment, and time to allow CSU to conduct these trials for the good of all Colorado soybean producers.

Eastern Colorado Irrigated Soybean
Trial Location in 2008



Research conducted in 2008 by Colorado State University Crops Testing Program
Department of Soil and Crop Sciences
Colorado State University Extension

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1999-2008 Colorado Soybean Variety Performance Trial Results

Introduction

In recent history, CSU has conducted one or two soybean variety trials per year since 1999 and it is useful to provide seed companies, collaborating scientists and extension agents, and our producers with results that have been accumulated over the past nine years of experience. No results appear for 2004 due to loss of the trial to hail damage. The accumulated results for the past several years show that there is excellent potential for increasing soybean production in Colorado. This is even more notable because several companies have expressed interest in constructing crusher/processor facilities for biodiesel in Colorado and soybeans may become the biofuel crop of preference.

CSU conducts variety performance trials to provide unbiased and reliable information to Colorado producers so they can select the best varieties for their farming conditions. Variable climatic conditions, innovations from biotechnology, acquisitions and mergers of seed companies, and rapid evolution of new varieties means that up-to-date and timely unbiased crop performance information is increasingly important to Colorado soybean producers.

In 2008, Colorado State University personnel evaluated commercial soybean variety performance under 30-inch rows under fully irrigated conditions at Yuma. All soybean trials have a randomized complete block experimental design with three replications. All soybean grain yields are reported in bu/ac and adjusted to 13.0% moisture content.

2008 Colorado Soybean Performance Trial at Yuma

Variety	Yield bu/ac	Test Weight lb/bu	Moisture %	Plant height in
Dyna-Gro Seed 38G23	72	55.0	13	31
Dyna-Gro Seed 39R29	64	53.8	19	33
Asgrow DKB29-09	62	54.0	17	35
Dyna-Gro Seed 37T26	62	53.9	16	38
Asgrow DKB22-52	61	53.6	13	29
Dyna-Gro Seed 37Y21	59	55.9	12	30
*Farmer Check	57	55.7	14	34
Asgrow DKB27-52	56	54.1	14	34
Asgrow AG2906	56	55.2	14	34
Dyna-Gro Seed 31D20	54	54.9	12	32
Dyna-Gro Seed 31F23	53	54.4	13	27
Dyna-Gro Seed 34Y25	52	54.5	14	32
Average	59	54.6	14	**32**
$LSD_{(0.05)}$	12			
$LSD_{(0.30)}$	6			

*Midwest Seed Genetics GR2934

Date of planting: 5/29/2008

Date of harvest: 9/25/2008

Seeding Rate: 165,000 seed/acre

Plot Size: 5 x 31'

Experimental Design: Randomized complete block, 3 replications

Previous Crop: Corn

Irrigation: pivot sprinkler

Fertilization: 1 1/2 gal Kugler Solution (minor elements)

Herbicide: Roundup

Insecticide: None

Soil Type: Sampson loam

2 Year Average Irrigated Soybean Variety Performance Trial at Yuma in 2007-2008

Hybrid	Yield	Test Weight	Moisture
	bu/ac	lb/bu	%
Dyna-Gro Seed 37T26	68.6	54.5	12.5
Dyna-Gro Seed 37Y21	79.2	56.2	10.4
Dyna-Gro Seed 31D20	65.7	55.7	10.2
Average	**71.2**	**55.4**	**11.0**

2007 Colorado Soybean Performance Trials

Table 1. 2007 Irrigated Soybean Variety Performance Trial at Yuma[1].

Hybrid	Yield[2]	Moisture	Test Weight	Plant Height
	bu/ac	%	lb/bu	inches
Dyna-Gro 37Y21	99.4	8.8	56.4	30
NK Brand S28-B4	88.1	8.6	56.0	34
Farmer Check[3]	83.7	8.5	55.7	37
Dyna-Gro 31D20	77.4	8.3	56.4	34
NK Brand S28-G1	75.6	8.8	55.7	34
Dyna-Gro 37T26	75.2	9.0	55.1	37
Dyna-Gro 35F25	73.8	8.7	55.0	34
Dyna-Gro 36F22	70.2	8.4	55.8	26
Dyna-Gro 36C28	69.7	8.8	55.3	35
Dyna-Gro 33D27	66.9	9.2	55.9	39
Average	**78.0**	**8.7**	**55.7**	**34**
[4]$LSD_{(0.30)}$	7.5	0.2	1.0	2
[4]$LSD_{(0.05)}$	8.4	0.4	1.9	5

[1]Trial conducted on the Bob Taylor farm; seeded 05/25 and harvested 10/02/07.

[2]Yields corrected to 13% seed moisture.

[3]Farmer Check is Asgrow SN79553.

[4]$LSD_{(0.30)}$ is more useful to producers selecting a variety to plant but $LSD_{(0.05)}$ is preferred by some seed companies.

Site Information

Plot Size: 7.5' x 31' with 30" row spacing

Experimental Design: randomized complete block; 3 replications

Seeding Rate: approximately 165,000 seeds/acre

Previous Crop: Corn

Irrigation: Sprinkler

Soil Type: Rago Silt Loam

Herbicide: Roundup

Table 2. 2-Yr Average Irrigated Soybean Variety Performance Trial at Yuma in 2006-07

Table 2. 2-Yr Average Irrigated Soybean Variety Performance Trial at Yuma in 2006-07.

Hybrid	Yield	Moisture	Test Weight
	bu/ac	%	lb/bu
NK Brand S28-G1	87.7	7.9	56.4
Dyna-Gro 37T26	86.6	7.9	56.4
Average	**87.2**	**7.9**	**56.4**

Table 3. 2007 Dryland* Soybean Variety Performance Trial at Akron[1].

Hybrid	Yield[2]	Moisture	Test Weight
	bu/ac	%	lb/bu
NK Brand S12-V7	18.2	6.8	54.9
Dyna-Gro 39D11	16.3	6.7	50.3
Dyna-Gro 36P10	16.1	6.4	50.6
Dyna-Gro 33X19	15.9	6.7	42.5
NK Brand S08-C3	13.8	6.5	45.2
Roughrider Genetics RG607RR	12.8	6.9	41.8
NK Brand S02-M9	11.8	6.6	36.8
Dyna-Gro 32K16	11.7	6.6	38.4
NK Brand S14-A7	11.5	6.9	37.7
Roughrider Genetics RG604RR	10.0	6.9	32.4
Roughrider Genetics RG405RR	9.9	6.9	32.4
Dyna-Gro 33T06	9.6	6.8	31.3
Roughrider Genetics RG603RR	8.3	7.1	29.4
Roughrider Genetics RG200RR	7.8	7.0	25.6
Roughrider Genetics RG600RR	7.5	7.2	24.4
Roughrider Genetics RG601NRR	7.2	7.2	23.8
Roughrider Genetics RG6008RR	5.9	7.2	19.4
Average	**11.4**	**6.8**	**36.3**
[3]$LSD_{(0.30)}$	3.6	0.2	9.6
[3]$LSD_{(0.05)}$	7.0	0.5	18.5

*Total Precipitation: 7.58 inches.

[1]Trial conducted at the Central Great Plains Field Station; seeded 5/14 and harvested 9/5.

[2]Yields corrected to 13% seed moisture.

[3]$LSD_{(0.30)}$ is more useful for producers using these results to select a variety but some seed companies prefer $LSD_{(0.05)}$.

Site Information

Previous Crop: barley

Fertilizer: None

Herbicide: Roundup

Insecticide: None

Plot Size: 5' x 15' with 30" row spacing

Seeding Rate: 130,000 seeds/ac

Table 4. 2007 Limited Irrigation* Early Maturity Soybean Variety Trial at Fort Collins[1].

Hybrid	Yield[2]	Moisture	Test Weight
	bu/ac	%	lb/bu
NK Brand S12-V7	30.3	7.7	57.2
NK Brand S14-A7	28.0	7.6	56.2
Roughrider Genetics RG405RR	27.0	7.6	51.5
Dyna-Gro 33X19	26.2	8.0	48.1
Check One	24.7	7.4	56.1
Roughrider Genetics RG603RR	22.7	7.4	56.0
Dyna-Gro 36P10	22.5	7.3	53.9
Dyna-Gro 39D11	22.4	7.8	56.7
NK Brand S02-M9	22.2	7.5	54.6
Roughrider Genetics RG607RR	21.3	7.9	56.1
NK Brand S08-C3	20.8	7.7	43.0
Roughrider Genetics RG604RR	16.6	7.6	47.6
Dyna-Gro 32K16	15.8	7.4	39.7
Roughrider Genetics RG200RR	15.6	7.3	46.2
Roughrider Genetics RG601NRR	15.6	7.7	49.9
Dyna-Gro 33T06	15.6	7.9	45.6
Roughrider Genetics RG200RR	13.7	7.5	45.2
Roughrider Genetics RG6008RR	10.9	7.5	35.8
Average	**20.7**	**7.6**	**49.9**
[3]$LSD_{(0.30)}$	6.6	0.3	8.8
[3]$LSD_{(0.05)}$	12.7	0.6	16.9

*Total water received (precipitation plus irrigation) = 13.7 inches. The trial site soil was highly sodic which resulted in undiagnosed but visible nutrient deficiency symptoms.

[1]Trial conducted at the Anheuser-Busch Nutri-Turf Farm; seeded 5/14 and harvested 9/5.

[2]Yields corrected to 13% seed moisture.

[3]$LSD_{(0.30)}$ is more useful for producers using these results to select a variety but some seed company collaborators use $LSD_{(0.05)}$.

Site Information

Previous Crop: corn

Herbicide: Roundup

Plot Size: 5' x 15' with 30" row spacing

Seeding Rate: 130,000 seeds/ac

Table 5. 2007 Limited Irrigation* Medium Maturity Soybean Variety Trial at Fort Collins[1].

Hybrid	Yield[2]	Moisture	Test Weight
	bu/ac	%	lb/bu
Dyna-Gro 37T26	31.9	7.3	57.1
Dyna-Gro 36C28	29.8	7.5	56.8
NK Brand S28-G1	29.7	7.8	57.4
Dyna-Gro 37Y21	28.6	7.5	56.9
NK Brand S28-B4	24.8	7.6	57.0
Dyna-Gro 36F22	24.1	7.4	54.4
Dyna-Gro 33D27	21.9	7.6	56.8
Dyna-Gro 35F25	18.8	7.5	54.8
Dyna-Gro 31D20	16.0	7.3	51.4
Average	**25.2**	**7.5**	**55.8**
[3]$LSD_{(0.30)}$	3.9	1.9	1.9
[3]$LSD_{(0.05)}$	7.7	0.2	3.8

*Total water received (precipitation plus irrigation) = 13.7 inches. The trial site soil was highly sodic which resulted in undiagnosed but visible nutrient deficiency symptoms.

[1]Trial conducted at the Nutri-Turf Farm; seeded 5/14 and harvested 9/28.

[2]Yields corrected to 13% seed moisture.

[3]$LSD_{(0.30)}$ is more useful for producers using these results to select a variety but some seed company collaborators wish to use $LSD_{(0.05)}$.

Site Information

Previous Crop: Corn

Herbicide: Roundup

Plot Size: 5' x 15' with 30" row spacing

Seeding Rate: 130,000 seeds/ac

Table 6. 2007 Limited Irrigation* Early Maturity Soybean Variety Performance at Rocky Ford[1].

Hybrid	Yield[2]	Moisture	Test Weight	Shattering[3]
	bu/ac	%	lb/bu	(1-10)
NK Brand S08-C3	48.9	10.7	59.1	0.8
Dyna-Gro 33X19	48.1	11.7	56.8	2.0
Dyna-Gro 39D11	43.2	12.5	57.2	0.7
Roughrider Genetics RG604RR	42.3	11.8	58.2	2.3
NK Brand S14-A7	39.9	12.3	57.2	1.2
NK Brand S02-M9	39.5	12.4	57.5	2.0
Dyna-Gro 36P10	38.9	12.9	58.1	4.0
Dyna-Gro 32K16	38.1	12.1	54.9	2.7
NK Brand S12-V7	35.0	10.3	60.8	3.0
Roughrider Genetics RG607RR	32.0	10.5	57.9	4.0
Roughrider Genetics RG200RR	29.4	11.9	58.9	4.0
Roughrider Genetics RG405RR	27.8	11.7	58.3	4.7
Roughrider Genetics RG600RR	27.4	12.1	56.5	3.3
Roughrider Genetics RG601NRR	26.5	11.2	58.8	3.7
Dyna-Gro 33T06	24.6	14.0	55.8	5.0
Roughrider Genetics RG603RR	24.1	12.7	57.5	8.0
Roughrider Genetics RG6008RR	20.6	11.9	57.3	5.0
Average	**34.5**	**11.9**	**57.7**	**3.3**
[4]$LSD_{(0.30)}$	3.8	0.5	1.1	
[4]$LSD_{(0.05)}$	7.3	1.0	2.1	

*Total water received (precipitation plus irrigation) = 11 inches

[1]Trial conducted at the Arkansas Valley Research Center; seeded 5/14 and harvested 9/24.

[2]Yields corrected to 13% seed moisture.

[3]Rating scale 1-10, with 1 = no shatter and 10 = completely shattered.

[4]$LSD_{(0.30)}$ is more useful for producers using these results to select a variety but some seed company collaborators wish to use $LSD_{(0.05)}$.

Site Information

Plot Size: 7.5' x 32' with 30" row spacing

Seeding Rate: 130,000 seeds/ac

Herbicide: Dual Magnum/Roundup

Comments: There was good soil moisture in the seedbed (top 12 inches) at planting. The soybean plants emerged before the first irrigation, i.e., in less than a week.
There was a severe woolly bear caterpillar infestation, which started in early August and resulted in complete defoliation five to six weeks later which significantly reduced yields.

Table 7. 2007 Limited Irrigation* Medium Maturity Soybean Variety Performance at Rocky

Hybrid	Yield[2]	Moisture	Test Weight	Shattering[3]
	bu/ac	%	lb/bu	(1-10)
Dyna-Gro 36F22	44.9	9.1	57.4	0.7
Dyna-Gro 37Y21	43.5	10.0	57.8	0.8
Dyna-Gro 35F25	41.4	8.9	58.8	2.8
Dyna-Gro 31D20	40.9	9.5	57.7	0.7
Dyna-Gro 36C28	38.2	9.7	58.4	0.7
Dyna-Gro 37T26	37.3	9.6	58.5	1.5
Dyna-Gro 33D27	36.5	9.0	58.3	0.8
Average	**40.4**	**9.4**	**58.1**	**1.1**
[4]$LSD_{(0.30)}$	4.2	0.6	0.6	
[4]$LSD_{(0.05)}$	8.4	1.2	1.2	

*Total water received (precipitation plus irrigation) = 11 inches

[1]Trial conducted at the Arkansas Valley Research Center; seeded 5/14 and harvested 9/24.

[2]Yields corrected to 13% seed moisture.

[3]Rating scale 1-10, with 1 = no shatter and 10 = completely shattered.

[4]$LSD_{(0.30)}$ is more useful for producers using these results to select a variety but some seed company collaborators wish to use $LSD_{(0.05)}$.

Site Information

Plot Size: 7.5' x 32' with 30" row spacing

Seeding Rate: 130,000 seeds/ac

Herbicide: Dual Magnum/Roundup

Comments: There was good soil moisture in the seedbed (top 12 inches) at planting. The soybean plants emerged before the first irrigation, i.e., in less than one week.
There was a severe woolly bear caterpillar infestation, which started in early August and resulted in complete defoliation five to six weeks later which significantly reduced yields.

Table 8. 2007 Irrigated Soybean Variety Performance Trial at Stratton[1].

Hybrid	Yield	Moisture	Test Weight	Plant Height
	bu/ac	%	lb/bu	inches
Asgrow DKB22-52	73.4	8.7	58.4	26
Asgrow AG2802	71.9	9.0	57.3	37
Asgrow AG2703	71.5	8.4	57.5	35
Asgrow DKB26-53	71.0	9.0	59.3	31
Check[2]	70.6	8.7	57.5	36
Asgrow AG3102	69.8	8.8	58.9	39
Asgrow DKB24-52	67.5	8.4	57.8	34
Average	**70.8**	**8.7**	**58.0**	**34**

[1]Trial conducted by Ron Meyer and Tim Stahlecker on the Jerry and Lester Hasart farm; seeded 05/22 and harvested 09/28/07.

[2]The Check is Asgrow AG3006.

Site Information

Plot Size: 25' wide, lengths ranging from 1244' to 1283'

Seeding Rate: 245,000

Previous Crop: corn

Irrigation: sprinkler

Soil Type: Silt loam

Fertilization: 26-0-0

Herbicide: Roundup Weathermax/Select

Insecticide: none

2006 Colorado Soybean Performance Trials

Table 1. 2006 Irrigated trial of soybean varieties in row planting at Yuma[1].

Hybrid	Yield	Moisture	Test Weight	Plant Height	Lodge[2]	Shatter[3]
	bu/ac	%	lb/bu	in	1-10	1-10
NK Brand S28-G1	99.7	7.0	57.0	33.5	1.5	1.0
Dyna-Gro 37T26	98.1	6.7	57.6	40.0	1.5	1.0
NK Brand S27-L4	96.5	6.5	56.7	36.0	1.0	1.0
Dyna-Gro 36D24	94.9	6.4	57.6	36.5	1.3	1.0
Dyna-Gro 39J25	93.7	7.4	56.4	31.0	1.8	1.0
Dyna-Gro 32C25	92.8	6.2	56.3	35.5	1.0	1.0
NK Brand S27-T7	89.6	6.6	57.4	33.5	1.0	1.0
Dyna-Gro 33X19	85.7	6.3	56.9	32.0	1.0	1.0
Dyna-Gro 35C23	85.0	6.2	57.7	36.8	1.5	1.0
Average	**92.9**	**6.6**	**57.1**	**35.0**	**1.3**	**1.0**
$LSD_{(0.30)}$	5.7					

[1]Trial conducted on the Bob Taylor farm; seeded 5/15 and harvested 10/2.
[2]Rating scale 1-10, with 1 = no lodging and 10 = completely lodged.
[3]Rating scale 1-10, with 1 = no shatter and 10 = completely shattered.
*Good growing conditions and excellent weed control.

Site Information
Plot Size: row planting trial 7.5' x 31' with 7.5 inch row spacing; solid planting trial 5' x 31'; conventional till
Experimental Design: randomized complete block
Seeding Rate: approximately 165,000 seeds/acre for row trial and 198,000 seeds/acre for solid trial.
Previous Crop: corn
Irrigation: sprinkler
Soil Type: Richfield silt loam
Fertilization: 35 lbs N acre-1
Herbicide: Round-up

Table 2. 2-yr average soybean variety performance in row planting at Yuma in 2005-06.

Hybrid	Yield	Grain Moisture	Test Weight
	bu/ac	%	lb/bu
NK Brand S27-T7	79.7	7.1	57.0
NK Brand S28-G1	79.4	7.4	56.8
Average	**79.5**	**7.3**	**56.9**

Table 3. 2006 Irrigated trial of soybean varieties in solid planting at Yuma[1].

Hybrid	Yield	Moisture	Test Weight	Plant Height	Lodge[2]	Shatter[3]
	bu/ac	%	lb/bu	in	1-10	1-10
NK Brand S27-L4	80.3	8.6	57.3	34	1.0	1.0
NK Brand S27-T7	79.8	8.8	57.8	32	2.0	1.0
NK Brand S28-G1	78.0	9.4	57.3	37	2.3	1.0
Dyna-Gro 39J25	68.1	9.3	57.1	34	2.8	1.0
Average	**76.6**	**9.0**	**57.4**	**34**	**2.0**	**1.0**
$LSD_{(0.30)}$	6.1					

[1]Trial conducted on the Bob Taylor farm; seeded 5/15 and harvested 10/2.
[2]Rating scale 1-10, with 1 = no lodging and 10 = completely lodged.
[3]Rating scale 1-10, with 1 = no shatter and 10 = completely shattered.
*Good growing conditions and excellent weed control.

Site Information
Plot Size: row planting trial 7.5' x 31' with 7.5 inch row spacing; solid planting trial 5' x 31'; conventional till
Experimental Design: randomized complete block
Seeding Rate: approximately 165,000 seeds/acre for row trial and 198,000 seeds/acre for solid trial.
Previous Crop: corn
Irrigation: sprinkler
Soil Type: Richfield silt loam
Fertilization: 35 lbs N acre-1
Herbicide: Round-up

Table 4. 2-yr average soybean variety performance in solid planting at Yuma in 2005-06.

Hybrid	Yield	Grain Moisture	Test Weight
	bu/ac	%	lb/bu
NK Brand S27-T7	74.8	8.2	57.3
NK Brand S28-G1	68.5	8.6	56.9
Average	**71.7**	**8.4**	**57.1**

2005 Colorado Soybean Performance Trials

Differential soybean variety response to solid planting or row planting

A combined analysis of planting system and variety response revealed a significant interaction between these two factors. This means that some varieties were ranked higher in one planting system than in the other system, and that variety performance is affected by the planting system. See the results below by planting system. However, the variety NK Brand S27-T7 was the highest yielding variety in both planting systems, albeit not significantly higher yielding than DEKALB DKB26-53 in the solid planting system, and not significantly higher yielding than NK Brand S29-C9 in the row planting system. The two planting systems were not significantly different from one another in terms of yield.

Table 1. Irrigated trial of soybean varieties in solid planting at Yuma[1].

Hybrid	Yield	Moisture	Test Weight	Plant Height
	bu/ac	%	lb/bu	in
NK Brand S27-T7	69.7	7.7	56.7	27
DEKALB DKB26-53	62.2	7.8	56.4	31
NK Brand S28-G1	59.1	7.9	56.5	29
ASGROW AG3005	51.2	8.2	56.9	32
DEKALB DKB29-51	50.3	7.7	56.2	32
Garst 2018 (RR)	50.2	7.8	56.9	29
Garst 2677 (RR)	48.7	7.6	56.0	28
ASGROW AG2403	46.0	7.6	55.7	26
NK Brand S28-W2	45.6	8.0	56.8	28
NK Brand S29-C9	32.8	7.8	56.2	33
Average	**51.6**	**7.8**	**56.4**	**29**
$LSD_{(0.30)}$	9.5			

[1]Trial conducted on the Bob Taylor farm; seeded 5/23 and harvested 10/03/05.
*No shatter.
**Good growing conditions.

Table 2. Irrigated trial of soybean varieties in row planting at Yuma[1].

Hybrid	Yield	Moisture	Test Weight	Plant Height	Shatter
	bu/ac	%	lb/bu	in	%
NK Brand S27-T7	58.2	7.7	55.9	31	0.0
NK Brand S29-C9	57.7	7.8	56.0	38	0.7
NK Brand S28-W2	51.1	7.7	56.6	32	0.3
NK Brand S28-G1	50.6	7.8	56.5	32	0.0
Myconate - Non-treated	50.4	7.6	53.7	29	0.3
Garst 2018 (RR)	49.9	7.8	56.6	29	0.0
Myconate - Treated	47.8	7.7	55.6	31	0.0
Garst 2677 (RR)	40.6	7.9	54.7	31	0.0
Average	**50.8**	**7.8**	**55.7**	**32**	**0.2**
$LSD_{(0.30)}$	4.1				

[1]Trial conducted on the Bob Taylor farm; seeded 5/23 and harvested 10/03/05.
*Good growing conditions.

2003 Colorado Soybean Performance Trials

2003 was our third year of testing soybean varieties at Yuma. This sprinkler-irrigated trial included only Roundup Ready varieties. Yuma has a relatively long growing season (average 2615 corn growing degree days) and appropriate for Group 2 maturity varieties.

Rocky Ford, site of soybean variety trials for several years, has a longer growing season (2837 corn growing degree days) and can produce late Group 3 or early Group 4 maturity soybeans. We are extremely pleased with high yields in 2003 at Yuma and the Arkansas Valley Research Center at Rocky Ford. The Rocky Ford trial was furrow irrigated and both conventional and Roundup Ready varieties were included where conventional herbicides were used. Plots in both trials consisted of four rows, each 36 ft long. Yields are expressed at 13% grain moisture as bu/ac (60 lbs per bushel).

Table 1. Irrigated soybean variety performance trial at Rocky Ford[1].

Variety	Yield	Moisture	Test Weight	Plant Height	Leaf Drop[2]
	bu/ac	%	lb/bu	in	date
DG 37R39	66	7.1	55.7	33	259
DG 34P38	63	7.0	56.1	31	258
Triumph TR3752 (RR)	62	7.0	56.0	36	257
Garst 3824 RR/N	61	7.0	55.6	35	258
DG 3399 + RR	61	6.9	55.2	34	260
Garst 3135 (RR)	57	7.0	55.8	30	252
Average	**62**	**7.0**	**55.7**	**33**	**257**
$LSD_{(0.30)}$	4				

[1]Trial conducted at the Arkansas Valley Research Center; seeded 5/13 and harvested 9/29.
[2]Julian Date - 50% leaf drop.

Rocky Ford Site Information

Soil Type: silty, clay loam
Previous Crop: corn
Fertilization: 11 lbs N $acre^{-1}$; 52 lbs P_2O_5 $acre^{-1}$
Herbicide: Dual II Magnum, Gramoxone Extra, Basagran, Blazer, Poast Crop Oil
Irrigation: furrow

Table 2. Irrigated soybean variety performance trial at Yuma[1].

Variety	Yield	Moisture	Test Weight	Plant Height	Lodging[2]
	bu/ac	%	lb/bu	in	rating
ASGROW AG2403	69	9.0	55.0	31	1
DEKALB DKB25-51	66	10.1	55.0	38	1
DG 31G30	64	11.1	55.4	32	1
Garst 2018 (RR)	61	9.9	55.8	35	1
Triumph TRX2J28 (RR)	61	9.7	55.5	39	1
DEKALB DKB28-52	61	10.8	55.1	36	1
ASGROW AG2703	60	11.1	55.6	38	1
Garst 2677 (RR)	60	9.6	56.6	33	1
DG 38K28	59	10.2	55.8	38	2
Farmer Check*	55	9.7	56.6	37	1
DG 35R27	52	11.7	56.0	34	1
ASGROW AG3005	50	12.4	54.6	39	1
Average	**60**	**10.4**	**55.6**	**36**	**1**
$LSD_{(0.30)}$	7				

[1]Trial conducted on the Max Olsen farm; seeded 5/21 and harvested 10/02.
[2]Lodging rating scale 1-5, 1 = Best.
*Farmer check was NK 528-W2.

Yuma Site Information
Soil Type: ascalon fine sandy loam
Previous Crop: sunflowers
Herbicide: Roundup
Irrigation: sprinkler

2002 Colorado Soybean Performance Trials

2002 was the second year of testing soybean varieties at Yuma. The 2001 trial was severely compromised by hail. Our second attempt at soybean variety testing at Yuma was more successful, without hail and with vigorous vegetative growth, but yields were depressed by high temperatures and mediocre seed set. This sprinkler irrigated trial included only Roundup Ready varieties. Yuma has a relatively long growing season (average 2615 corn growing degree days) and is appropriate for Group 2 maturity varieties.

Rocky Ford, site of soybean variety trials for several years, has a longer growing season (2837 corn growing degree days) and can produce late Group 3 or early Group 4 maturity soybeans. We are extremely pleased with the high yields in this trial at the Arkansas Valley Research Center at Rocky Ford. This might have been a record high yield for soybeans in Colorado (up to 2002) and gives a rare glance at variety performance under high yield conditions. The trial was furrow irrigated and both conventional and Roundup Ready varieties were included where conventional herbicides were used. Plots in both trials consisted of four rows, each 36 ft long. Yields are expressed at 13% grain moisture as bu/ac (60 lbs per bushel).

Table 1. Irrigated soybean variety performance trial at Rocky Ford[1].

Variety[2]	Yield	Moisture	Test Weight	Plant Height	Leaf Drop[3]	Maturity
	bu/ac	%	lb/bu	in	date	rating
DG 3399+RR	89	8.5	54.4	39	272	3.3
Syngenta S39-Q4	88	10.8	53.5	39	276	3.9
Garst 3135(RR)	84	8.4	55.6	32	262	3.1
Triumph TR3752RR	81	8.8	55.6	41	271	3.7
Pioneer brand 93B85	80	8.6	55.1	36	267	3.8
DG 3390 N RR	78	8.7	54.9	38	272	3.3
US Seeds US S4002(RR)	77	8.7	55.2	36	273	4.0
Pioneer brand 93B68	76	8.5	56.6	33	264	3.6
Pioneer brand 93B72	75	9.1	55.0	37	266	3.7
US Seeds US S3902(RR)	74	9.9	55.1	39	273	3.9
AG3701 + Myconate +	72	8.6	56.3	34	268	3.7
DG 3388RR	69	8.6	55.3	41	271	3.3
Garst 355(RR)	69	8.4	56.6	35	263	3.5
AG3701 + Myconate -	66	8.7	56.3	38	269	3.7
Garst 3083(RR)	63	8.7	55.4	30	260	3.0
Average	**76**	**8.9**	**55.4**	**37**	**269**	
$LSD_{(0.30)}$	5					

[1]Trial conducted on the Arkansas Valley Research Center; seeded 5/16 and harvested 10/7.
[2]Myconate® is a new agricultural product developed by researchers at Michigan State University. Myconate® is a signal compound put out by plant roots in times of stress that encourages beneficial fungus (mycorrhizae) to colonize them. The fungus extends the plants root system and helps it take up nutrients and water, and fight off disease. Previous research has shown significant yield increases on a number of crops in a variety of locations. This simple compound is non-toxic, is quickly broken down in the soil, and is effective in very small quantities. It is water soluble and easy to apply to seeds or soil. Myconate® is a trademark product of VAMTech, L.L.C., commercially available for enhancing mycorrhizal colonization.
[3]Julian date.

Rocky Ford Site Information

Soil Type: silty, clay loam
Previous Crop: corn
Fertilization: 16 lbs P_2O_5 acre^{-1}; 75 lbs K_2O acre^{-1}
Herbicide: Basagran, Blazer, Poast
Irrigation: furrow

Table 2. Irrigated soybean variety performance trial at Yuma[1].

Variety	Yield	Moisture	Test Weight	Plant Height	Shatter	Maturity
	bu/ac	%	lb/bu	in	rating[2]	rating
ASGROW AG3003	47	8.0	55.6	33	1.0	3.0
DGX 432 RR	43	7.7	53.4	34	1.0	4.3
ASGROW AG2703	42	8.2	53.8	34	1.0	2.7
DEKALB DKB26-51	42	8.2	56.4	32	1.0	2.6
DG 3270 RR	42	8.6	56.1	39	1.0	3.2
DG 3287 RR	41	7.7	56.2	31	1.0	3.2
Syngenta S29-C9	41	7.8	54.1	36	1.0	2.9
DEKALB DKB24-51	41	7.8	56.6	28	1.0	2.4
US Seeds US S2503(RR)	40	7.6	55.4	32	1.7	2.5
Garst 2677 (RR)	39	7.5	56.6	31	1.0	2.6
US Seeds US S2703(RR)	37	8.3	53.8	35	1.0	2.7
Pioneer 91B91+Myconate	37	7.8	51.3	30	1.0	1.7
Garst 2332 (RR)	33	7.7	56.9	29	1.0	2.3
DEKALB DKB23-51	33	7.6	57.6	30	1.0	2.3
Pioneer 91B91+Myconate	30	8.0	55.4	28	1.0	1.7
Garst 2603(RR)	30	7.9	51.5	33	1.0	2.6
Average	**39**	**7.9**	**55.0**	**32**	**1.0**	
$LSD_{(0.30)}$	5					

[1]Trial conducted on the Rod Hahn farm; seeded 5/14 and harvested 10/1.
[2] Rating scale 0-10.
*Myconate® is a trademark product of VAMTech, L.L.C., for enhancing mycorrhizal colonization

Yuma Site Information

Soil Type: Manter, loamy sand
Previous Crop: corn
Fertilization: 9 lbs N acre^{-1}; 23 lbs P_2O_5 acre^{-1}; 6 lbs K_2O acre^{-1}; 6 lbs S; .5 lbs Zn
Herbicide: Touchdown
Irrigation: sprinkler

2001 Colorado Soybean Performance Trials

2001 was the first year of testing soybean varieties at Yuma. This sprinkler irrigated trial on soils with pH in the range of 7.0 – 7.4 included only Roundup Ready varieties. Yuma has a relatively long growing season (average 2615 corn growing degree days) and is appropriate for Group 2 maturity varieties. Our first attempt at soybean variety testing in Yuma was marred by a severe hail storm during the first week of September. Our collaborating grower thinks yields were reduced by 40% due to the storm.

Rocky Ford, site of soybean variety trials for several years, has a longer growing season (2837 corn growing degree days) and can produce late Group 3 or early Group 4 maturity soybeans. The trial was furrow irrigated with a soil pH of 7.8. Both conventional and Roundup Ready varieties were included, and conventional herbicides were used. Plots in both trials consisted of four rows, each 36 ft long. Yields are expressed at 13% grain moisture as bu/ac with 60 lbs of soybeans in one bushel.

Table 1. Irrigated soybean variety performance trial at Rocky Ford[1].

Variety[2]	Yield	Moisture	Plant Height	Leaf Drop
	bu/ac	%	in	date[3]
DG 3399(RR)	72.9	7.2	35	275
Pioneer brand 93B85	72.1	7.0	33	275
Garst 355(RR)	70.8	6.8	36	273
Pioneer brand 93B72	69.9	6.9	32	274
Pioneer brand 93B53	69.1	6.9	34	273
Garst 437(RR/N)	68.8	7.7	38	277
DG 3388(RR)	68.5	7.2	37	0*
Asgrow AG3903	67.9	7.4	35	275
Asgrow AG3902	67.8	7.5	36	0*
Garst 381(RR/STS)	67.6	6.9	35	273
DEKALB DKB40-51	61.8	7.6	37	277
Average	**68.8**	**7.2**	**35**	**225**
$LSD_{(0.30)}$	4.4			

[1]Trial conducted on the Arkansas Valley Research Center; seeded 6/4 and harvested 10/10. No shatter.
[2]Abbreviations used with soybean variety traits: RR = Roundup Ready, RR/N = Not Roundup Ready, STS = Sulfonylurea Tolerance
[3]Julian date.
*Frosted before leaf drop.

Table 2. Irrigated soybean variety performance trial at Yuma[1].

Variety[2]	Yield	Moisture	Plant Height	Shatter
	bu/ac	%	in	rating[3]
DG 3270(RR)	47.6	13.4	34	2.3
Syngenta S29-C9	45.7	11.2	31	2.0
Prairie Brand PB-2717(RR)	42.8	11.8	34	2.0
Asgrow AG2703	41.2	13.5	33	2.0
Asgrow AG2402	36.6	12.7	36	3.0
Syngenta S24-K2	35.0	14.5	36	2.7
Garst 198(RR)	32.6	12.7	30	3.0
Prairie Brand PB-2131(RR)	32.5	12.6	34	3.0
DG 3263(RR)	31.6	12.9	37	2.3
DEKALB DKB26-51	30.8	11.5	31	2.3
Garst 2547(RR)	29.9	12.4	32	3.3
DEKALB DKB23-51	28.5	13.0	33	3.0
Asgrow AG2302	28.0	11.0	33	3.0
Garst 2603(RR)	25.0	13.5	34	3.0
Garst 2112(RR/N)	24.9	12.3	29	3.0
Average	**34.2**	**12.6**	**33**	**2.7**
$LSD_{(0.30)}$	4.4			

[1]Trial conducted on the Joe Harper farm; seeded 6/6 and harvested 9/25.
[3]Rating scale 0-10, with 0 = no shattering and 10 = 100% shattering. Shatter was due to hail damage on 9/15/01.
Site information not available

2000 Colorado Soybean Performance Trials

Table 1. Irrigated soybean variety performance trial at Rocky Ford[1].

Variety	Yield	Moisture	Test Average	Test Weight
	bu/ac	%	%	lb/bu
DKB 38-51	74.2	8.3	112	56.0
346 RR	72.4	8.5	110	56.2
5404	71.3	8.4	108	55.8
93B51	71.2	8.4	108	56.1
5383	70.8	8.3	107	56.0
5370 RR	67.8	8.3	103	56.2
TR3750 RR	67.6	8.4	102	56.4
93B34	66.7	8.4	101	56.8
TR3939 RR	65.7	8.7	99	56.6
CX 391 RR	65.7	9.0	99	56.4
AG 3701	65.4	8.3	99	57.0
5316 RR	63.6	8.5	96	55.7
AG4101	63.4	11.8	96	55.7
TR4319 RR	61.3	14.4	93	55.6
429 RR	60.9	8.9	92	56.9
94B01	58.8	8.9	89	56.5
9396	57.5	8.3	87	56.6
Average	**66.0**			
$LSD_{(0.10)}$	5.7			

[1]Trial conducted on the Arkansas Valley Research Center; seeded 5/31 and harvested 10/13.
*Yield adjusted to 13% moisture and 60 lbs per bushel.

Site Information
Fertilizer - 50 lbs. P_2O_5/Acre
Soybean inoculants - 15 oz./300 lbs. of seed
Herbicide - Pursuit .0626 lbs. AI/Acre - 6/6, Poast .28 lbs. AI/Acre + Dash - 6/20, Basagran 1 lb. + Blazer .25 lbs. AI/Acre - 6/23
Fungicide - None
Insecticide - None

1999 Colorado Soybean Performance Trials

Table 1. Irrigated soybean variety performance trial at Rocky Ford[1].

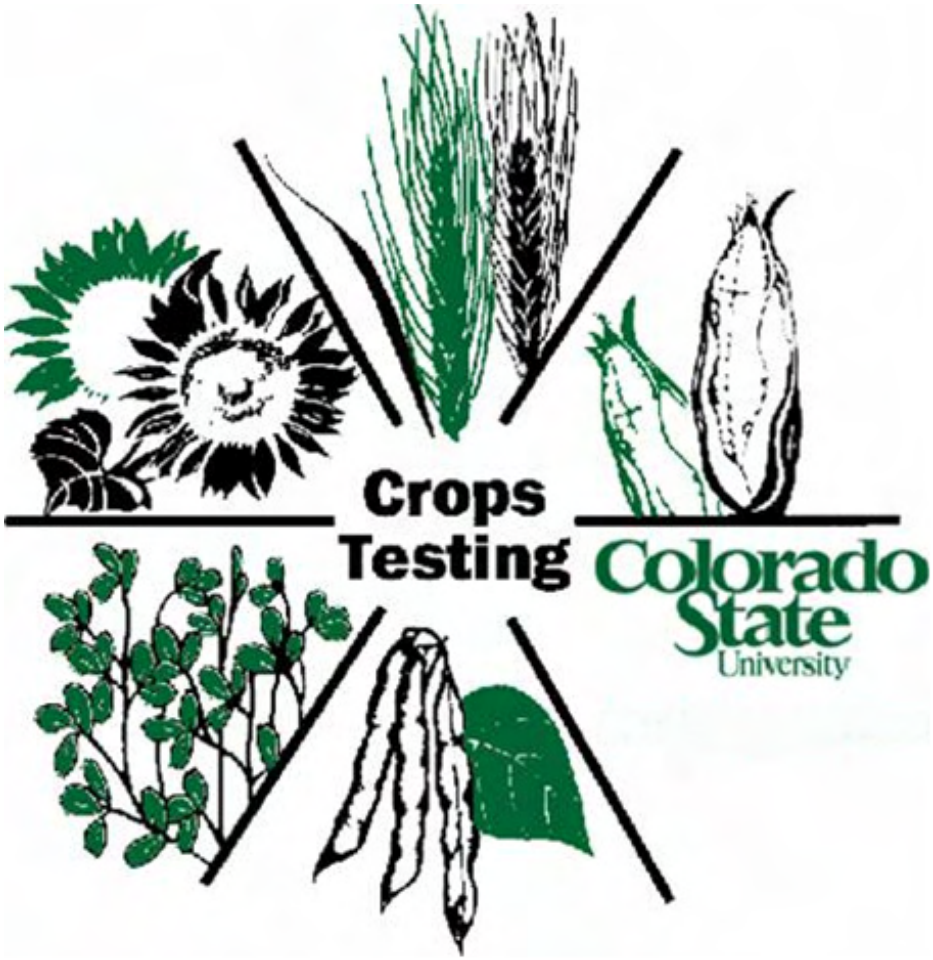
Variety	Brand	Yield	Test Average	Test Weight	Moisture
		bu./ac	%	lb/bu	%
TR4319RR	Triumph	63.7	119	53.5	7.7
CX419RR	DeKalb	59.7	111	55.5	7.7
S39-D9	NK Novartis	59.7	111	55.5	7.5
TR 3939RR	Triumph	59.4	111	54.1	7.6
9396	Pioneer	59.0	110	55.7	7.6
377RR	Producers	57.7	107	55.1	7.6
S42-K2	NK Novartis	57.3	107	55.7	7.7
93B34	Pioneer	56.9	106	55.2	7.6
94B01	Pioneer	55.9	104	55.3	7.8
93B51	Pioneer	55.1	103	54.9	7.8
5366NRR	Mycogen	53.5	100	54.7	7.6
S36-U2	NK Novartis	52.6	98	53.4	7.7
5370RR	Mycogen	52.2	97	54.4	7.6
TR4339RR	Triumph	50.7	94	55.9	7.7
J-399	Mycogen	49.7	93	55.4	7.5
CX390RR	DeKalb	42.0	78	55.6	7.7
X8135RR	Producers	27.5	51	55.7	8.0
Average		**53.7**			
$LSD_{(0.10)}$		8.9			

[1]Trial conducted on the Arkansas Valley Research Center; seeded 5/24 and harvested 10/13.
*Yield adjusted to 13% moisture and 60 lbs per bushel.

Site Information
Fertilizer - 50 lbs. P_2O_5/Acre
Soybean inoculants - 15 oz./300 lbs. of seed
Herbicide - Roundup 1 lb. + Dual II .98 lbs. AI/Acre - preplant

Seed Company Entrants in the Colorado Soybean Performance Trials from 1999-2008

Entrant	Brand/Hybrid	Address	Telephone
Garst Seed Co.	Garst	1101 Mansfield Drive, Fort Collins, CO 80525	970-222-4719
Dyna-Gro Seeds	Dyna-Gro	240 22nd Street, Greeley, CO 80631	800-332-4045
Monsanto	DEKALB/Asgrow	4312 Carol Ave., Cortland, IL 60112	815-754-4809
NK Brand Seeds, Inc.	NK Brand/Syngenta	86852 572nd Avenue, Box 277, Laurel, NE 68745	402-256-9109
Pioneer Hi-Bred Int'l	Pioneer brand	1616 S. Kentucky, Suite C-150, Amarillo, TX 79102	806-356-0160
Plant Health Care, Inc.	Myconate	440 William Pitt Way, Pittsburgh, PA 15238	412-826-5488
Prairie Brand Seed Co.	Prairie Brand	15 X Avenue, Story City, IA 50248	515-733-2101
Roughrider Genetics	RG	1735 NDSU Research Park Drive, Fargo, ND 58105	701-231-8168
UAP-Pueblo	DG	Box 1279, Garden City, KS 67846	620-275-6127
United Suppliers, Inc.	US Seeds	PO Box 538, Eldora, IA 50627	877-714-4503
VAMTech, L.L.C.	Myconate	3186 Pine Tree Rd., Unit D, Lansing, MT 48911	517-819-9739



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