Pest Control in Crops Grown in Northwestern New Mexico, 2009

Annual Data Report 100-2009

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Cooperative Extension Service • College of Agricultural, Consumer and Environmental Sciences

Table of Contents **Page**

INTRODUCTION

Weeds cause more total crop losses than any other agricultural pest (Arnold, 1981–2008; Hall et al., 1995; Currie, 2004; Lorenzi and Jeffery, 1987). Weeds reduce crop yields and quality, harbor insects and plant diseases, and cause irrigation and harvesting problems (Chandler et al., 1984; Lorenzi and Jeffery, 1987; Currie, 2005; Massinga et al., 1999, 2003). As a result, weeds reduce the total value of agricultural products in the United States by 10 to 15% (Lorenzi and Jeffery, 1987). Estimated average losses during 1975 to 1979 in the potential production of field corn, potatoes, and onion ranged from 7 to 16% in the Mountain States Region, which includes New Mexico (Chandler et al., 1984). San Juan County ranks first in potato production, fourth in alfalfa production, and second in corn production among all New Mexico counties (New Mexico Agricultural Statistics, 2007).

An estimated 90% of all tillage operations are for weed control (J.G. Foster, personal communications, 2005–2007). Herbicides can reduce the number of required tillage operations and can be used where cultivation is not possible, such as within crop rows or in solid-seeded crops. With increasing fuel and labor costs, herbicides are often more economical than other methods of weed control.

Many herbicides are approved for use on crops grown on medium- and fine-textured, high-organic soils. Little information is available, however, regarding their effectiveness and safety on low-organic, coarse-textured soils that are common to northwestern New Mexico.

The Environmental Protection Agency (EPA) has become more stringent with regard to research data required for pesticide approval. Thus, it has become critical that state Agricultural Science Centers work closely with commercial companies developing new pesticides in order to obtain the research data required by the EPA. This cooperation will

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benefit the agricultural industry of the state and assist EPA pesticide registration.

Before 1980, the use of herbicides in northwestern New Mexico was limited. Most growers were still using 2,4-D in corn for broadleaf weed control, while annual grasses were left in check. In alfalfa, burning winter annual mustard and downy brome with propane was not uncommon. An herbicide field-screening program has provided essential information on the activity of new and old herbicides on crops grown in northwestern New Mexico (Arnold, 1981–2008).

As new land on the Navajo Indian Irrigation Project comes under cultivation, weed and insect problems are varied and may change with each successive crop. It is only through continued research that the demand for reliable information on the use of pesticides in northwestern New Mexico can be met.

I wish to express my sincere appreciation to the following companies for providing technical assistance, products, and/or financial assistance: Bayer CropScience, BASF, E.I. DuPont, Gowan, BLM/FFO, FMC, Monsanto, Dow AgroSciences, Navajo Agricultural Products Industry, Pioneer Hi-Bred, Syngenta Crop Protection, and Southwest Seed.

BASF, Broadleaf Weed Control in Field Corn with Preemergence Followed by Sequential Late Postemergence Treatments

Introduction

Many herbicides can be used in sequential treatments. These trials are preemergence herbicides followed by sequential late postemergence treatments. If weeds escape the preemergence treatment, a late postemergence treatment may then be used to assist in weed control.

Objectives

- Determine efficacy of selected herbicides for control of annual broadleaf weeds in field corn.
- Determine corn tolerance to applied selected herbicides and corn yield.

Materials and methods

A field experiment was conducted in 2009 at Farmington, NM, to evaluate the response of field corn (Pioneer PO541HR) and annual broadleaf weeds to preemergence followed by sequential late postemergence herbicides. Soils were a Doak silt loam with a pH of 7.4 and an organic matter content of less than 0.5%. Soils were fertilized according to New Mexico State University recommendations based on soil tests. The experimental design was a randomized complete block with three replications. Individual plots were four 34-in. rows 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Field corn was planted with flexi-planters equipped with disk openers on May 7. Approximately 35 in. of sprinkler water were applied during the growing season. Preemergence herbicides were applied on May 11 and immediately incorporated with 0.75 in. of sprinkler-applied water. Soil had a maximum and minimum temperature of 81 and 63°F, respectively. Late postemergence treatments were applied on June 10 when field corn was in the 5th to 6th leaf stage and weeds were small (<4 in.). Air temperature maximum and minimum during late postemergence applications was 75 and 49°F, respectively. Black nightshade and redroot and prostrate pigweed infestations were heavy and common lambsquarters and Russian thistle infestations were moderate throughout the experimental area. Preemergence treatments were rated visually for crop injury on June 10 and weed control on June 10 and July 24. Sequential late postemergence treatments were rated visually for weed control on July 24. Stand counts were made on June 10 by counting individual plants per 10 ft of the third row of each plot. Field corn was harvested on November 11 by combining the center two rows of each plot using a John Deere 3300 combine equipped with a load cell. Results obtained were subjected to analysis of variance at $P = 0.05$.

Results and discussion

Weed control and injury evaluations: Crop injury evaluations and stand counts are given in Table 1. Weed control evaluations are given in Tables 1 and 2. There was no crop injury and there were no significant differences among treatments for stand count (Table 1). On June 10, all treatments gave excellent control of redroot and prostrate pigweed, black nightshade, Russian thistle and common lambsquarters except Roundup PowerMAX applied preemergence at 22 oz/ac plus 0.25% v/v nis plus 5 lb/ac ams and the weedy check (Table 1). On July 24, all treatments gave good to excellent control of redroot and prostrate pigweed and common lambsquarters. Roundup PowerMAX applied preemergence followed by a sequential late postemergence treatment of 22 oz/ac plus 0.25% nis plus 5 lb/ac ams gave poor control of black nightshade and Russian thistle (Table 2).

Crop yields: Yields are given in Table 2. Yields were 180 to 216 bu/ac higher in the treated plots as compared to the weedy check.

Bayer CropScience, Broadleaf Weed Control in Field Corn with Preemergence and Preemergence Followed by Sequential Early and Late Postemergence Treatments

Introduction

Many herbicides can be used in sequential treatments. These trials are preemergence herbicides followed by sequential postemergence treatments. If weeds escape the preemergence treatment, a postemergence treatment may then be used to assist in weed control.

Objectives

- Determine efficacy of selected herbicides for control of annual broadleaf weeds in field corn.
- Determine corn tolerance to applied selected herbicides and corn yields.

Materials and methods

A field experiment was conducted in 2009 at Farmington, NM, to evaluate the response of field corn (Pioneer PO541HR) and annual broadleaf weeds to preemergence and preemergence followed by sequential early postemergence and late postemergence herbicides. Soils were a Doak silt loam with a pH of 7.4 and an organic matter content of less than 0.5%. Soils were fertilized according to New Mexico State University recommendations based on soil tests. The experimental design was a randomized complete block with four replications. Individual plots were four 34-in. rows 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Field corn was planted with flexi-planters equipped with disk openers on May 7. Approximately 35 in. of sprinkler water were applied during the growing season. Preemergence herbicides were applied on May 11 and immediately incorporated with 0.75 in. of sprinkler-applied water. Soil had a maximum and minimum temperature of 81 and 63°F, respectively. Early postemergence treatments were applied on May 28 when field corn was in the 4th leaf stage and weeds were small (<2 in.). Late postemergence treatments were applied on June 8 when field corn was in the 6th to 7th leaf stage and weeds were less than 4 in. tall. Air temperature maximum and minimum during early and late postemergence applications were 75 and 50°F and 73 and 47°F, respectively.

Black nightshade and redroot and prostrate pigweed infestations were heavy and common lambsquarters and Russian thistle infestations were moderate throughout the experimental area. Preemergence treatments were evaluated visually on May 28, July 8, and August 11. Early and late postemergence treatments were evaluated on July 8 and August 11. Crop injury was evaluated on May 28 for preemergence treatments and July 8 and August 11 for early and late postemergence treatments, respectively. Stand counts were made on May 28 by counting individual plants per 10 ft of the third row of each plot. Field corn was harvested on November 10 by combining the center two rows of each plot using a John Deere 3300 combine equipped with a load cell. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Weed control and crop injury evaluations are given in Tables 3, 4, and 5. Stand counts are given in Table 3. All treatments gave excellent control of redroot and prostrate pigweed, black nightshade, Russian thistle, and common lambsquarters, except the weedy check (Tables 3, 4, and 5).

Crop yields: Yields are given in Table 5. Yields were 185 to 195 bu/ac higher in the herbicide-treated plots as compared to the check.

Bayer CropScience, Broadleaf Weed Control in Field Corn with Preemergence and Preemergence Followed by Sequential Early and Late Postemergence Herbicides

Introduction

Many herbicides can be used in sequential treatments. These trials are preemergence herbicides followed by sequential postemergence treatments. If weeds escape the preemergence treatment, a postemergence treatment may then be used to assist in weed control.

Objectives

- Determine efficacy of selected herbicides for control of annual broadleaf weeds in field corn.
- Determine corn tolerance to applied selected herbicides and corn yield.

Materials and methods

A field experiment was conducted in 2009 at Farmington, NM, to evaluate the response of field corn (Pioneer PO541HR) and annual broadleaf weeds to preemergence and preemergence followed by sequential early postemergence and late postemergence herbicides. Soils were a Doak silt loam with a pH of 7.4 and an organic matter content of less than 0.5%. Soils were fertilized according to New Mexico State University recommendations based on soil tests. The experimental design was a randomized complete block with four replications. Individual plots were four 34-in. rows 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Field corn was planted with flexi-planters equipped with disk openers on May 7. Approximately 35 in. of sprinkler water were applied during the growing season. Preemergence herbicides were applied on May 11 and immediately incorporated with 0.75 in. of sprinkler-applied water. Soil had a maximum and minimum temperature of 82 and 50°F, respectively. Early postemergence treatments were applied on June 3 when field corn was in the 3rd to 4th leaf stage and weeds were small (<2 in.). The late postemergence treatment was applied on June 8 when field corn was in the 6th leaf stage and weeds were less than 4 in. tall. Air temperature maximum and minimum during early and late postemergence applications were 79 and 53°F and 73 and 47°F, respectively. Black nightshade and redroot and prostrate pigweed infestations were heavy and common lambsquarters and Russian thistle infestations were moderate throughout the experimental area. Preemergence treatments were evaluated visually on June 3 and July 8. Early and late postemergence treatments were evaluated on July 8 and August 11, respectively. Crop injury was evaluated on June 10 for preemergence treatments and on July 10 and August 11 for early and late postemergence treatments. Stand counts were made on June 10 by counting individual plants per 10 ft of the third row of each plot. Field corn was harvested on November 10 by combining the center two rows of each plot using a John Deere 3300 combine equipped with a load cell. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Weed control evaluations are given in Tables 6, 7, and 8. Crop injury evaluations and stand counts are given in Tables 6 and 7. There were no significant difference among treatments for stand count (Tables 6 and 7). Capreno plus atrazine plus mso plus 32-0-0 applied early postemergence at 3 plus 16 oz/ac in combination with mso and 32-0-0 at 1 and 2% v/v showed slight crop injury (Table 7). There were no crop injury symptoms for the late postemergence herbicides (data not shown). Preemergence treatments gave excellent control of all weeds (Table 6). Impact plus atrazine plus coc plus 32-0-0 applied early postemergence at 0.75 plus 16 oz/ac in combination with coc and 32-0-0 at 1 and 2% v/v gave excellent control of black nightshade but poor control of other weeds (Table 7). Capreno plus Ignite 280 plus ams applied late postemergence at 2 plus 22 oz/ac in combination with ams at 2.8 lb/ac gave poor control of all weeds (Table 8).

Crop yields: Yields are given in Tables 7 and 8. Yields were 103 to 220 bu/ac higher in the herbicide-treated plots as compared to the check.

DuPont Crop Protection, Broadleaf Weed Control in Field Corn with Resolve Technology Postemergence Herbicides

Introduction

Many herbicides may be used as a standalone postemergence treatment. This trial is broadleaf weed control in field corn with Resolve technology postemergence herbicides.

Objectives

- Determine efficacy of selected herbicides for control of annual broadleaf weeds in field corn.
- Determine corn tolerance to applied selected herbicides and corn yield.

Materials and methods

A field experiment was conducted in 2009 at Farmington, NM, to evaluate the response of field corn (Pioneer PO541HR) and annual broadleaf weeds to postemergence herbicides. Soils were a Doak silt loam with a pH of 7.4 and an organic matter content of less than 0.5%. Soils were fertilized according to New Mexico State University recommendations based on soil tests. The experimental design was a randomized complete block with three replications. Individual plots were four 34-in. rows 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Field corn was planted with flexi-planters equipped with disk openers on May 7. Approximately 35 in. of sprinkler water were applied during the growing season. The preemergence treatment was applied on May 11 and immediately incorporated with 0.75 in. of sprinkler-applied water. Soil temperature maximum and minimum during application was 81 and 63°F, respectively. Postemergence treatments were applied on May 28 when field corn was in the 2nd to 3rd leaf stage and weeds were small (<1 in.). Air temperature maximum and minimum during postemergence applications was 75 and 50°F, respectively. Black nightshade and redroot and prostrate pigweed infestations were heavy and common lambsquarters and Russian thistle infestations were moderate throughout the experimental area. The preemergence treatment was rated visually for crop injury and weed control on June 10. Stand counts were taken on July 2 by counting individual plants per 10 ft of the third row of each plot. Postemergence treatments were evaluated visually for weed control on July 2 and August 6. Field corn was harvested on November 11 by combining the center two rows of each plot using a John Deere 3300 combine equipped with a load cell. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Crop injury evaluations and stand counts are given in Table 9. Weed control evaluations are given in Tables 9 and 10. None of the treatments showed signs of crop injury and there were no significant differences in stand count (Table 9). The preemergence treatment of Cinch ATZ applied at 32 oz/ac was evaluated visually for weed control on June 10 and gave excellent control of broadleaf weeds (data not shown). Cinch ATZ applied preemergence at 32 oz/ac followed by a sequential postemergence treatment of Resolve plus Callisto applied at 1.2 plus 2.5 oz/ac and Resolve plus Callisto plus atrazine applied postemergence at 1.2 plus 2.5 plus 16 oz/ac were the only two treatments to give 95% or better control of broadleaf weeds (Tables 9 and 10).

Crop yields: Yields are given in Table 10. Yields were 153 to 208 bu/ac higher in the herbicide-treated plots as compared to the weedy check (Table 10).

Monsanto, Broadleaf Weed Control in Field Corn with Early and Late Postemergence Herbicides

Introduction

Postemergence herbicides are most effective if applied when the weeds and field corn are small. If weeds are not controlled, weeds then become difficult to control and corn growth is restricted. This trial examined the efficacy of postemergence herbicides applied when field corn and weeds were small, and evaluated their effect on crop injury and field corn yields.

Objectives

- Determine efficacy of selected herbicides for control of annual broadleaf weeds in field corn.
- Determine corn tolerance to applied selected herbicides and corn yield.

Materials and methods

A field experiment was conducted in 2009 at Farmington, NM, to evaluate the response of field corn (DeKalb, DKC 49-32) and annual broadleaf weeds to postemergence herbicides. Soils were a Doak silt loam with a pH of 7.4 and an organic matter content of less than 0.5%. Soils were fertilized according to New Mexico State University recommendations based on soil tests. The experimental design was a randomized complete block with three replications. Individual plots were four 34-in. rows 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Field corn was planted with flexi-planters equipped with disk openers on May 7. Approximately 35 in. of sprinkler water were applied during the growing season. Dual II Mag was applied preemergence to all treatments at 1.12 lb ai/ac on May 11 and was immediately incorporated with 0.75 in. of sprinkler-applied water. Early postemergence treatments were applied on June 3 when field corn was in the 3rd to 4th leaf stage and weeds were small (<2 in.). The late postemergence treatments were applied on June 24 when field corn was in the 7th to 8th leaf stage and weeds were less than 4 in. tall. Air temperature maximum and minimum for early and late applied postemergence herbicides was 79 and 53°F and 92 and 63°F, respectively. Black nightshade and redroot and prostrate pigweed infestations were heavy and common lambsquarters and Russian thistle infestations were moderate throughout the experimental area. Crop injury and early and late postemergence treatments were evaluated on July 7 and 24. Stand counts were made on July 7 and 24 by counting individual plants per 10 ft of the third row of each plot. Field corn was harvested on November 10 by combining the center two rows of each plot using a John Deere 3300 combine equipped with a load cell. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Weed control, stand counts, and crop injury evaluations are given in Tables 11 and 12. There were no crop injury symptoms from any of the treatments for both rating periods. There were no significant differences among treatments for stand count Tables 11 and 12. On July 7, all treatments gave 92% or better control of redroot and prostrate pigweed and black nightshade. Impact applied at 0.5 oz/ac plus coc and ams at 1% v/v and 5 lb/ac and Roundup PowerMAX applied at 32 oz/ac plus ams at 5 lb/ac gave poor control of Russian thistle (Table 11). On July 24, all treatments gave good to excellent control of redroot and prostrate pigweed, black nightshade, and common lambsquarters. Impact applied at 0.5 and 0.75 oz/ac plus coc and ams at 1% and 5 lb/ac gave poor control of Russian thistle (Table 12).

Crop yields: Yields are given in Tables 11 and 12. Yields were 99 to 136 bu/ac higher in the herbicide-treated plots as compared to the weedy check. This variety of corn became heavily infested with two-spotted spider mite in early August, possibly reducing yields approximately 30 to 40%.

BASF, Broadleaf Weed Control in Spring Wheat

Introduction

Russian thistle, redroot and prostrate pigweed, common lambsquarters, and black nightshade can become troublesome weeds in spring wheat. If not controlled, they can decrease wheat yields and interfere with harvest operations. Field trials were conducted to evaluate the control of these weeds by selected herbicides in spring wheat.

Objectives

- Determine efficacy of selected herbicides for control of broadleaf weeds in spring wheat.
- Determine spring wheat tolerance to applied selected preemergence herbicides and wheat yield.

Materials and methods

A field experiment was conducted in 2009 on a Wall sandy loam (less than 1% organic matter) at Farmington, NM, to evaluate the response of spring wheat and annual broadleaf weeds to preemergence herbicides. The experimental design was a randomized complete block with four replications. Individual plots were 5 ft wide by 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. On April 15, spring wheat (var. Jerome) was planted on six 10-in. rows at 100 lb/ac with a cone seeder. Preemergence treatments were applied on April 16 and incorporated with 0.75 in of sprinkler-applied water on April 17. Soil temperature maximum and minimum during treatment application was 63 and 45°F, respectively. Goldsky was applied postemergence at 16 oz/ac to all treatments except the weedy check on May 14. Russian thistle and redroot and prostrate pigweed infestations were moderate throughout the experimental area, approximately 10 to 15 per square yard. Crop injury evaluations and weed control evaluations were made on May 13. Spring wheat was harvested with a John Deere 3300 combine equipped with a load cell on August 17. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Results of crop injury and weed control evaluations are given in Table 13. No crop injury was noted from any of the treatments. Sharpen plus Clarity plus Roundup WeatherMAX applied at 1 plus 2 plus 11 oz/ac gave 92% or better control of all three weeds.

Crop yields: Results of yield are given in Table 13. Yields were 21 to 47 bu/ac higher in the herbicide-treated plots as compared to the weedy check.

Dow AgroSciences and DuPont Crop Protection, Broadleaf Weed Control in Spring Wheat

Introduction

Russian thistle, redroot and prostrate pigweed, common lambsquarters, and black nightshade can become troublesome weeds in spring wheat. If not controlled, they can decrease wheat yields and interfere with harvest operations. Field trials were conducted to evaluate the control of these weeds by selected herbicides in spring wheat.

Objectives

- Determine efficacy of selected herbicides for control of broadleaf weeds in spring wheat.
- Determine spring wheat tolerance to applied selected preemergence herbicides and wheat yield.

Materials and methods

A field experiment was conducted in 2009 on a Wall sandy loam (less than 1% organic matter) at Farmington, NM, to evaluate the response of spring wheat and annual broadleaf weeds to postemergence herbicides. The experimental design was a randomized complete block with four replications. Individual plots were 5 ft wide by 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. On April 15, spring wheat (var. Jerome) was planted on six 10-in. rows at 100 lb/ac with a cone seeder. Treatments were applied on May 14 when spring wheat was in the 4th to 5th tillering stage and weeds were small (<2 in.) Air temperature maximum and minimum during treatment application was 80 and 48°F, respectively. Approximately 30 in. of sprinkler-applied water were applied to all treatments. Russian thistle and redroot pigweed infestations were moderate throughout the experimental area, approximately 10 to 15 per square yard. Crop injury evaluations and weed control evaluations were made on June 11. Spring wheat was harvested with a John Deere 3300 combine equipped with a load cell on August 17. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Results of crop injury and weed control evaluations are given in Table 14. No crop injury was noted from any of the treatments. All treatments gave 98% or better control of Russian thistle and redroot pigweed except the weedy check.

Crop yields: Results of yield are given in Table 14. Yields were 20 to 25 bu/ac higher in the herbicide-treated plots as compared to the weedy check.

Dow AgroSciences, Jim Hill Mustard Control in Winter Wheat

Introduction

Jim Hill, or tumble, mustard is a troublesome weed in winter wheat. If not controlled they can decrease wheat yields and interfere with harvest operations. Field trials were conducted to evaluate the control of Jim Hill mustard by selected herbicides in winter wheat.

Objectives

- Determine efficacy of selected herbicides for control of Jim Hill mustard in winter wheat.
- Determine winter wheat tolerance to applied selected herbicides and wheat yield.

Materials and methods

A field experiment was conducted in 2008 on a Wall sandy loam (less than 1% organic matter) at Farmington, NM, to evaluate the response of winter wheat and Jim Hill mustard to postemergence herbicides. The experimental design was a randomized complete block with four replications. Individual plots were 10 ft wide by 30 ft long. Treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Winter wheat (var. Jagaline) was planted on 18-in. rows at 100 lb/ac with a Massey Ferguson grain drill on September 10, 2008. Eighteen-inch row spacings were used to ensure Jim Hill mustard pressure. Treatments were applied on March 2 when winter wheat was in the 4th to 5th tillering stage and Jim Hill mustard had less than a three inch rosette. Air temperature maximum and minimum during treatment application was 63 and 35°F, respectively. Approximately 30 in. of sprinkler-applied water were applied to all treatments. Jim Hill mustard infestation was heavy, approximately 40 to 50 plants per square yard. Crop injury evaluations and weed control evaluations were made on April 2. Winter wheat was harvested with a John Deere 3300 combine equipped with a load cell on July 30. Results obtained were subjected to analysis of variance at P = 0.05.

Results and discussion

Weed control and injury evaluations: Results of crop injury and weed control evaluations are given in Table 15. No crop injury was noted from any of the treatments. All treatments gave 91% or better control of Jim Hill mustard except the weedy check.

Crop yields: Results of yield are given in Table 15. Yields were 54 to 60 bu/ac higher in the herbicide-treated plots as compared to the weedy check.

Weed Control Demonstrations on the Navajo Agricultural Products Industry Farm

Introduction

Field corn acreage on the Navajo Agricultural Products Industry (NAPI) farm was approximately 11,500 acres. These fields are irrigated by center pivot irrigation. Weeds like cocklebur and Canada thistle are troublesome and can cause yield reductions and harvesting problems if left uncontrolled.

Objectives

- Determine efficacy of selected herbicides for control of cocklebur and Canada thistle in field corn and popcorn.

Materials and methods

Three demonstration studies were conducted in 2009 on fields 2-49A and 8-41A for control of cocklebur and field 6-12 for control of Canada thistle. All treatments in fields 2-49A and 8-41A were applied preemergence on May 13. Treatments were incorporated with approximately 0.5 in. of sprinkler-applied water immediately after application. Soil temperature maximum and minimum during application was 82 and 63°F, respectively. These fields were then evaluated by the NAPI crop manager. Postemergence treatments were applied to field 6-12 on June 4. All treatments were applied with a compressed air backpack sprayer calibrated to deliver 30 gal/ac at 35 psi. Air temperature maximum and minimum during application was 83 and 55°F, respectively. All plots were four 30-in. rows 30 ft long. Crop injury and Canada thistle evaluations were made on June 30.

Results and discussion

Weed control and injury evaluations: Preemergence treatment rates for NAPI fields 2-49A and 8-41A for cocklebur control are given in Table 16. These treatments were rated for crop injury and cocklebur control by the NAPI crop manager. Postemergence treatment rates, crop injury, and control of Canada thistle on NAPI field 6-12 are given in Table 17. Touchdown plus Status plus R-11 plus Bronc Max applied postemergence at 20 plus 5 plus 3.2 plus 9.6 oz/ac gave 90% or better control of Canada thistle Table 17. Stinger applied at 8 or 10.7 oz/ac plus coc at 8 oz/ac was rated too early for effective Canada thistle control. Over time, this product does control Canada thistle effectively.

Table 1. Control of Annual Broadleaf Weeds with Preemergence Herbicides in Field Corn on June 10; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Stand Count (no.)	Crop Injury[b] (%)	Weed Control[b,c] (%) Amare	Amabl	Solni	Saskr	Cheal
Lumax	80	23	0	100	100	100	100	100
Harness Xtra	64	22	0	100	100	100	98	100
Integrity	13	22	0	100	100	100	100	100
Corvus	3.3	24	0	100	100	100	100	100
Sharpen + Prowl H_2O	2 + 32	22	0	98	100	100	98	100
Integrity	10	22	0	100	100	100	100	100
Harness Xtra	48	23	0	100	100	100	100	100
Sharpen + Harness Xtra	2 + 48	22	0	100	100	100	100	100
Roundup PowerMAX + nis + ams	22	23	0	62	55	37	22	23
Guardsman Max	44	22	0	100	100	100	100	100
Weedy check		23	0	0	0	0	0	0
LSD 0.05		ns		2	3	2	2	1

[a]Treatments applied with Nis and ams at 0.25% v/v and 5 lb/ac, respectively.
[b]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[c]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 2. Control of Annual Broadleaf Weeds with Preemergence Followed by Sequential Late Postemergence Herbicides in Field Corn on July 24; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Weed Control[b,c] (%) Amare	Amabl	Solni	Saskr	Cheal	Yield (bu/ac)
Lumax	80	100	100	99	98	100	262
Harness Xtra	64	98	99	99	96	100	238
Integrity	13	100	98	98	96	100	240
Corvus	3.3	99	98	97	96	98	244
Sharpen + Prowl H_2O	2 + 32	98	100	100	96	100	238
Integrity/Roundup PowerMAX + nis + ams	10/22	100	100	100	100	100	260
Harness Xtra/Roundup PowerMAX + nis + ams	48/22	100	100	100	100	100	237
Sharpen + Harness Xtra/Roundup PowerMAX + nis + ams	2 + 48/22	100	100	100	100	100	242
Roundup Powermax/Roundup PowerMAX + nis + ams	22/22	96	95	51	76	86	226
Sharpen + Prowl H_2O/Roundup PowerMAX + nis + ams	2 + 32/22	100	100	100	100	100	243
Integrity/Roundup PowerMAX + Status + nis + ams	10/22 + 2.5	100	100	100	100	100	244
Guardsman Max/Status + ams	44/5	100	100	100	100	100	244
Weedy check		0	0	0	0	0	46
LSD 0.05		1	2	4	2	1	28

[a] First treatment applied preemergence, then a slash followed by a sequential late postemergence treatment. Treatments applied with Nis and ams at 0.25% v/v and 5 lb/ac, respectively.

[b] Based on a visual scale from 0-100, where 0 = no control and 100 = dead plants.

[c] Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 3. Control of Annual Broadleaf Weeds with Preemergence Herbicides in Field Corn on May 28; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments	Rate (oz/ac)	Stand Count (no.)	Crop Injury[a] (%)	Weed Control[a,b] (%) Amare	Amabl	Solni	Saskr	Cheal
Corvus	5	22	0	100	100	100	98	100
Corvus + atrazine	5 + 32	22	0	100	100	100	100	100
Balance Flexx + atrazine	5 + 32	21	0	100	100	100	100	100
Balance Flexx	3	22	0	100	100	100	100	100
Balance Flexx + atrazine	3 + 32	21	0	100	100	100	100	100
Balance Flexx+ Degree Xtra	4 + 95	21	0	100	100	100	100	100
Guardsman Max	44	22	0	100	100	100	99	100
Weedy check		22	0	0	0	0	0	0
LSD 0.05		ns		1	1	1	0.7	1

[a] Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[b] Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 4. Control of Annual Broadleaf Weeds with Preemergence Followed by Sequential Early Postemergence Herbicides in Field Corn on July 8; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Crop Injury[c] (%)	Weed Control[c,d] (%) Amare	Amabl	Solni	Saskr	Cheal
Corvus	5	0	100	100	100	100	100
Corvus + atrazine	5 + 32	0	100	100	100	100	100
Corvus + atrazine[b]	5 + 32	0	100	100	100	100	100
Balance Flexx + atrazine	5 + 32	0	100	100	100	100	100
Balance Flexx/atrazine	3/32	0	100	100	100	100	100
Balance Flexx + atrazine[b]	5 + 32	0	99	100	100	100	100
Balance Flexx + atrazine	3 + 32	0	100	100	100	98	100
Balance Flexx + Degree Xtra	4 + 95	0	100	100	100	99	100
Guardsman Max/Status + ams	44/5	0	100	100	100	100	100
Guardsman Max/Roundup PowerMAX + ams	44/22	0	100	100	100	100	97
Guardsman Max/Laudis + ams	44/3	0	99	100	100	100	100
Weedy check		0	0	0	0	0	0
LSD 0.05		ns	0.7	1	1	0.6	0.8

[a]First treatment applied preemergence, followed by a slash then an early postemergence treatment. AMS applied at 3.0 lb/ac.
[b]Treatments applied early postemergence.
[c]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[d]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 5. Control of Annual Broadleaf Weeds with Preemergence Followed by Sequential Early Postemergence and Late Postemergence Herbicides in Field Corn on August 11; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Crop Injury[d] (%)	Weed Control[d,e] (%) Amare	Amabl	Solni	Saskr	Cheal	Yield (bu/ac)
Corvus	5	0	99	99	100	99	99	247
Corvus + atrazine	5 + 32	0	100	99	99	100	99	237
Corvus + atrazine	5 + 32	0	98	99	99	99	100	243
Balance Flexx + atrazine	5 + 32	0	99	98	98	100	99	246
Balance Flexx/atrazine/Ignite 280 + ams[b]	3/32/22	0	99	100	99	100	100	237
Balance Flexx + atrazine	5 + 32	0	100	98	99	98	99	245
Balance Flexx + atrazine/Roundup PowerMAX + ams[c]	3 + 32/22	0	99	99	99	96	99	244
Balance Flexx + Degree Xtra	4 + 95	0	98	99	99	98	99	241
Guardsman Max/Status + ams	44/5	0	99	100	99	99	99	245
Guardsman Max/Roundup PowerMAX + ams	44/22	0	99	99	99	97	96	241
Guardsman Max/Laudis + ams	44/3	0	97	99	100	100	100	245
Weedy check		0	0	0	0	0	0	52
LSD 0.05		ns	2	2	2	2	2	27

[a] First treatment applied preemergence, followed by a slash then an early postemergence treatment. AMS applied at 3.0 lb/ac.
[b] First treatments applied preemergence, followed by a slash then an early postemergence treatment followed by a late postemergence treatment.
[c] First treatment applied preemergence, followed by a slash then a late postemergence treatment.
[d] Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[e] Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 6. Control of Annual Broadleaf Weeds with Preemergence Herbicides in Field Corn on June 3; NMSU Agricultural Science Center at Farmington, NM, 2009

		Stand	Crop	Weed Control[a,b]				
	Rate	Count	Injury[a]	Amare	Amabl	Solni	Saskr	Cheal
Treatments	(oz/ac)	(no.)	(%)	(%)				
Corvus + atrazine	3 + 32	22	0	100	100	100	100	100
Lumax	80	21	0	100	100	100	100	100
Weedy check		22	0	0	0	0	0	0
LSD 0.05		ns		1	1	1	1	1

[a]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[b]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 7. Control of Annual Broadleaf Weeds with Early Postemergence Herbicides in Field Corn on July 8; NMSU Agricultural Science Center at Farmington, NM, 2009

		Stand	Crop	Weed Control[b,c]					
	Rate	Count	Injury[b]	Amare	Amabl	Solni	Saskr	Cheal	Yield
Treatments[a]	(oz/ac)	(no.)	(%)	(%)					(bu/ac)
Halex GT + nis + ams	115	22	0	91	99	100	98	100	230
Capreno + atrazine + coc + 32-0-0	3 + 16	21	0	100	100	100	100	100	244
Impact + atrazine + coc + 32-0-0	0.75 + 16	22	0	29	43	100	27	74	157
Capreno + atrazine + mso + 32-0-0	3 + 16	22	1	100	100	100	100	100	237
Laudis + atrazine + mso + 32-0-0	2.6 + 16	21	0	99	98	100	99	99	234
Weedy check		22	0	0	0	0	0	0	42
LSD 0.05		ns	1	2	2	1	2	1	26

[a] Treatments applied with either a coc, mso, or 32-0-0 at 1 and 2% v/v and ams at 2.8 lb/ac.
[b] Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[c] Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 8. Control of Annual Broadleaf Weeds with Preemergence Followed by Late Postemergence Herbicides in Field Corn on August 11; NMSU Agricultural Science Center at Farmington, NM, 2009

		Weed Control[c,d]					
	Rate	Amare	Amabl	Solni	Saskr	Cheal	Yield
Treatments[a,b]	(oz/ac)	(%)					(bu/ac)
Corvus + atrazine/Capreno + atrazine + coc + 32-0-0	3 + 32/3 + 8	99	100	100	99	100	236
Corvus + atrazine/Capreno + mso + 32-0-0	3 + 32/3	98	99	99	99	100	235
Capreno + Roundup PowerMAX + ams	2 + 22	98	99	100	21	97	196
Capreno + Roundup PowerMAX + Superb HC + ams	3 + 11 + 12	98	98	92	22	92	188
Capreno + Ignite 280 + ams	2 + 22	60	43	53	35	65	145
Lumax/Capreno + atrazine + coc + 32-0-0	80/3 + 16	100	100	100	100	100	262
Weedy check		0	0	0	0	0	42
LSD 0.05		4	2	5	5	3	26

[a]First treatment applied preemergence, followed by a slash then a late postemergence treatment.
[b]Treatments applied with either a coc and 32-0-0 at 1 and 2% v/v and ams at 2.8 lb/ac.
[c]Based on a visual scale from 0-100, where 0 = no control and 100 = dead plants.
[d]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 9. Control of Annual Broadleaf Weeds with Resolve Technology Postemergence Herbicides in Field Corn on July 2; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Stand Count (no.)	Crop Injury[b] (%)	Weed Control[b,c] (%) Amare	Amabl	Solni	Saskr	Cheal
Resolve + Callisto + coc + ams	1.2 + 2.5	22	0	89	87	100	12	100
Cinch ATZ/Resolve + Callisto + coc + ams	32/1.2 + 2.5	24	0	100	100	100	100	100
Resolve + Callisto + Roundup PowerMAX + ams	1.2 + 2.5 + 22	23	0	100	100	100	10	100
Resolve + Callisto + Ignite 280 + ams	1.2 + 2.5 + 22	23	0	100	100	100	12	100
Resolve + Callisto + atrazine + coc + ams	1.2 + 2.5 + 16	23	0	100	100	100	98	100
Resolve Q + Callisto + coc + ams	1.25 + 2.5	22	0	84	83	100	12	91
Accent + Callisto + coc + ams	0.75 + 2.5	23	0	100	100	100	10	100
Steadfast Q + Callisto + coc + ams	1.5 + 1.2	24	0	100	100	100	10	100
Weedy check		23	0	0	0	0	0	0
LSD 0.05		ns		3	3	1	3	1

[a]First treatment applied preemergence, then a slash followed by a postemergence treatment. Surfactants were coc and ams applied at 1% v/v and 2 lb/ac, respectively.
[b]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[c]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 10. Control of Annual Broadleaf Weeds with Resolve Technology Postemergence Herbicides in Field Corn on August 6; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Weed Control[b,c] (%) Amare	Amabl	Solni	Saskr	Cheal	Yield (bu/ac)
Resolve + Callisto + coc + ams	1.2 + 2.5	88	84	99	10	97	206
Cinch ATZ/Resolve + Callisto + coc + ams	32/1.2 + 2.5	99	99	100	98	99	243
Resolve + Callisto + Roundup PowerMAX + ams	1.2 + 2.5 + 22	98	97	98	10	98	203
Resolve + Callisto + Ignite 280 + ams	1.2 + 2.5 + 22	98	97	98	10	95	198
Resolve + Callisto + atrazine + coc + ams	1.2 + 2.5 + 16	100	99	100	95	100	248
Resolve Q + Callisto + coc + ams	1.25 + 2.5	98	96	97	10	98	200
Accent + Callisto + coc + ams	0.75 + 2.5	97	96	97	10	95	202
Steadfast Q + Callisto + coc + ams	1.5 + 1.2	97	98	97	10	96	193
Weedy check		0	0	0	0	0	40
LSD 0.05		3	2	2	1	3	25

[a]First treatment applied preemergence, then a slash followed by a postemergence treatment. Surfactants were coc and ams applied at 1% v/v and 2 lb/ac, respectively.
[b]Based on a visual scale from 0-100, where 0 = no control and 100 = dead plants.
[c]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 11. Control of Annual Broadleaf Weeds with Postemergence Herbicides in Roundup Ready Field Corn on July 7; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments	Rate (oz/ac)	Stand Count (no.)	Crop Injury[c] (%)	Weed Control[c,d] (%) Amare	Amabl	Solni	Saskr	Cheal	Yield (bu/ac)
Impact + coc + ams[a]	0.5	22	0	100	100	100	52	97	158
Impact + Roundup PowerMAX + ams[b]	0.5 + 32	24	0	100	100	100	100	100	169
Impact + coc + ams[a]	0.75	23	0	98	98	100	87	96	164
Impact + Roundup PowerMAX + ams[b]	0.75 + 32	23	0	100	100	100	100	100	169
Status + coc + ams[a]	3	22	0	98	98	100	100	98	179
Status + Roundup PowerMAX + ams[b]	3 + 32	24	0	90	92	97	100	100	171
Status + coc + ams[a]	5	23	0	95	100	100	100	100	161
Status + Roundup PowerMAX + ams[b]	5 + 32	24	0	100	100	100	100	100	171
Roundup PowerMAX + ams[b]	32	24	0	100	98	100	17	68	148
Weedy check		23	0	0	0	0	0	0	46
LSD 0.05		ns		2	2	0.6	3	2	30

[a]Treatments applied with a coc and ams at 1% v/v and 5.0 lb/ac, respectively.
[b]Treatments applied with ams at 5.0 lb/ac.
[c]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[d]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 12. Control of Annual Broadleaf Weeds with Postemergence Herbicides in Roundup Ready Field Corn on July 24; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments	Rate (oz/ac)	Stand Count (no.)	Crop Injury[c] (%)	Weed Control[c,d] (%) Amare	Amabl	Solni	Saskr	Cheal	Yield (bu/ac)
Impact + coc + ams[a]	0.5	23	0	99	98	99	23	89	145
Impact + Roundup PowerMAX + ams[b]	0.5 + 32	24	0	100	100	100	100	100	170
Impact + coc + ams[a]	0.75	23	0	97	98	98	28	91	147
Impact + Roundup PowerMAX + ams[b]	0.75 + 32	25	0	100	100	100	100	100	163
Status + coc + ams[a]	5	23	0	99	100	100	96	98	182
Status + Roundup PowerMAX + ams[b]	5 + 32	24	0	100	100	100	100	100	175
Weedy check		23	0	0	0	0	0	0	46
LSD 0.05		ns		1	1	1	3	3	30

[a]Treatments applied with a coc and ams at 1% v/v and 5.0 lb/ac, respectively.
[b]Treatments applied with ams at 5.0 lb/ac.
[c]Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.
[d]Amare = redroot pigweed, Amabl = prostrate pigweed, Solni = black nightshade, Saskr = Russian thistle, and Cheal = common lambsquarters.

Table 13. Control of Redroot and Prostrate Pigweed and Russian Thistle in Jerome Spring Wheat with Selected Preemergence Herbicides and Spring Wheat Yield on May 13; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Crop Injury[b] (%)	Weed Control[b,c] (%) Amare	Amabl	Saskr	Yield (bu/ac)
Roundup WeatherMAX + ams	22	0	31	17	4	44
Sharpen + Roundup WeatherMAX + mso + ams	1 + 11	0	73	75	51	57
Sharpen + Roundup WeatherMAX + mso + ams	1 + 22	0	73	73	52	56
Sharpen + Roundup WeatherMAX + mso + ams	1.52 + 22	0	91	90	55	56
Sharpen + Clarity + Roundup WeatherMAX + mso + ams	1 + 2 + 11	0	95	92	92	66
2,4-D ester + Roundup WeatherMAX + nis + ams	16 + 22	0	72	69	90	70
Weedy check		0	0	0	0	23
LSD 0.05		0	5.2	4.9	3.4	7.2

[a]AMS = ammonium sulfate, NIS = non-ionic surfactant, and MSO = methylated seed oil. AMS applied at 5 lb/ac, MSO and NIS at 1.0 and 0.25% v/v, respectively.
[b]Rated on a scale from 0 to 100, where 0 = no control or crop injury and 100 = dead plants.
[c]Amare = redroot pigweed, Amabl = prostrate pigweed and Saskr = Russian thistle.

Table 14. Control of Russian Thistle and Redroot Pigweed in Jerome Spring Wheat with Selected Herbicides and Spring Wheat Yield on June 11; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Crop Injury[b] (%)	Weed Control[b,c] (%) Saskr	Amare	Yield (bu/ac)
Goldsky + nis + ams	16	0	100	100	61
Puma + Huskie + ams	10.5 + 11	0	100	100	65
Everest + Widematch	0.41 + 16	0	98	100	65
Axial XL + Affinity + Starane	16.4 + 0.6 + 5.3	0	99	100	62
Discover + Starane + MCP ester	12.8 + 8 + 8.6	0	100	100	63
Goldsky + MCP ester + ams	16 + 8.6	0	100	100	63
Harmony GT XP + 2,4-D + nis	0.4 + 5.3	0	100	100	62
Express + Harmony GT XP + 2,4-D + nis	0.2 + 0.2 + 5.3	0	100	100	63
2,4-D + nis	8	0	98	100	63
Banvel + nis	4	0	100	100	61
Harmony GT XP + Banvel + nis	0.4 + 2	0	100	100	60
Weedy check		0	0	0	40
LSD 0.05		0	1.1	1	5.8

[a]AMS = ammonium sulfate and NIS = non-ionic surfactant. AMS applied at 2.5 lb/ac and NIS at 0.25% v/v.
[b]Rated on a scale from 0 to 100, where 0 = no control or crop injury and 100 = dead plants.
[c]Saskr = Russian thistle and Amare = redroot pigweed.

Table 15. Control of Jim Hill Mustard in Jagaline Winter Wheat with Selected Herbicides and Winter Wheat Yield on April 2; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments[a]	Rate (oz/ac)	Crop Injury[b] (%)	Weed Control[b,c] SSYAL[c] (%)	Yield (bu/ac)
Powerflexx	2.6	0	92	67
Powerflexx	3.5	0	96	69
Huskie + Olympus Flex	11 + 3	0	100	71
Huskie + Olympus Flex	13 + 3	0	100	73
Powerflexx + Prowl H_20	2.6 + 32	0	91	69
Powerflexx + Prowl H_20	3.5 + 32	0	94	70
Huskie + Olympus Flex + Prowl H_20	11 + 3 + 32	0	99	73
Huskie + Olympus Flex + Prowl H_20	12 + 3 + 32	0	100	70
Harmony GT XP + 2,4-D	0.5 + 8	0	99	71
Weedy check		0	0	13
LSD 0.05		0	1.2	2.5

[a]Treatments applied with a COC and 32-0-0 at 0.5 and 1.0% v/v, respectively.
[b]Rated on a scale from 0 to 100, where 0 = no control or crop injury and 100 = dead plants.
[c]SSYAL = Jim Hill mustard.

Table 16. Preemergence Treatments Applied to NAPI Fields 2-49A and 8-41A for Control of Cocklebur on May 13; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments	Rate (oz/ac)
Integrity	13
Integrity	20
Sharpen	2
Sharpen	4
Balance flexx	2
Balance flexx	4
Capreno	2
Capreno	4
Corvus	4
Corvus	6
Weedy check	0

Table 17. Control of Canada Thistle with Postemergence Herbicides on NAPI Corn Field 6-12 on June 30; NMSU Agricultural Science Center at Farmington, NM, 2009

Treatments	Rate (oz/ac)	Crop injury[a] (%)	Canada thistle[a] (%)
Touchdown + R-11 + Bronc Max	40 + 3.2 + 9.6	0	70
Touchdown + R-11 + Bronc Max	80 + 3.2 + 9.6	0	75
Touchdown + Clarity + R-11 + Bronc Max	20 + 8 + 3.2 + 9.6	0	85
Touchdown + Northstar + R-11 + Bronc Max	20 + 5 + 3.2 + 9.6	0	85
Touchdown + Status + R-11 + Bronc Max	20 + 5 + 3.2 + 9.6	0	90
Touchdown + Callisto + R-11 + Bronc Max	20 + 3 + 3.2 + 9.6	0	50
Status + ROC + Bronc Max	7.5 + 16 + 9.6	0	95
Stinger + coc	8 + 8	0	55
Stinger + coc	10.7 + 8	0	65
Balance Flexx + coc + Bronc Max	2 + 8 + 9.6	0	10
Balance Flexx + coc + Bronc Max	4 + 8 + 9.6	0	10
Capreno + coc + Bronc Max	2 + 8 + 9.6	0	25
Capreno + coc + Bronc Max	4 + 8 + 9.6	0	25
Corvus + coc + Bronc Max	4 + 8 + 9.6	0	28
Corvus + coc + Bronc Max	6 + 8 + 9.6	0	50
Atrazine + Callisto + ROC + Bronc Max	8 + 3 + 16 + 19.2	0	70
Weedy check		0	0

[a] Based on a visual scale from 0-100, where 0 = no control or crop injury and 100 = dead plants.

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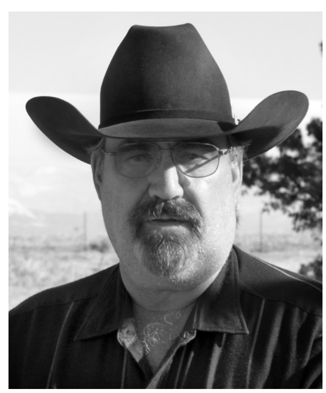

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May 2012 **Las Cruces, NM**