What's Cropping Up?

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NOT TOO HIGH ON GRAIN CORN POPULATIONS

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Modern corn hybrids tolerate stress, including drought and crowding stress, much better than older hybrids so recommended plant populations have increased significantly over the last 10 years. We evaluated eight hybrids at harvest populations from 21,000 to 33,000 plants, acre in 1991, 1992, and 1993 (Table 1), and concluded that harvest populations of about 28,000 plants/acre resulted in near-maximum yields with tolerable lodging levels (What's Cropping Up? Vol. 5, No. 2, p. 4-5). Plant breeders have further improved crowding stress or lodging tolerance in the more recent hybrid releases, including Bt hybrids, which may result in hybrids that respond to even higher populations. On the other hand, seed prices have increased significantly over the last 10 years, especially for Bt hybrids, so higher seeding rates may not result in economic gain. We evaluated two hybrids, 38A24 from Pioneer and DKC53-34 (RR/YGCB) from DeKalb, in 2003 to evaluate their response to planting rates of 25,000 to 40,000 plants/acre.

Unfortunately, 38A24 averaged only about 70% emergence at the late April planting date so final plant populations ranged from 18,000 to 27,000 plants/acre, so all populations were below the recommended harvest population (Table 2). Consequently, 38A24 showed a linear yield response (2.3 bu/1000 plant increase) to plant populations with a tolerable level of lodging, unharvestable ears, and yield loss, even at the highest planting rate. In contrast, DKC53-34 (RR/YGCB) averaged the expected 95% emergence so final populations ranged from 25,000 to 37,000 plants/acre (Table 3). Predictably, lodging, ear loss, and yield loss rose to intolerable levels as populations increased, which resulted in no yield response to plant populations for DKC53-34(RR/YGCB), the Bt hybrid. DKC53-34(RR/YGCB) had about twice the yield loss compared with 3824 at final populations of around 28,000 plants/acre, the recommended harvest population. Apparently, Bt vs. non-Bt hybrids

Table 1. Grain yield and percent lodging of eight corn hybrids at five harvest populations, averaged across the 1991, 1992, and 1993 growing seasons.

Harvest Populations	Yield	Lodging
plants/acre	bu/acre	%
21,000	135	1.0
24,000	140	1.7
27,000	146	5.0
30,000	148	9.2
33,000	150	11.8

can be equally or even more susceptible to lodging and yield losses under conditions of significant lodging pressure.

Conclusion

Admittedly, lodging pressure was severe in 2003 because of the numerous fall wind storms. We harvested our study on October 10th, however, so this experiment only encountered the September 19th wind storm. In most years in New York, the slow dry-down of corn because of cool and cloudy fall conditions extends the harvest season into late November or early December. We believe that the risk of encountering a wind storm or snow storm is fairly high during this 8-week dry-down period so we continue to recommend harvest populations of less than 30,000 plants/acre for most soils in NY. We will conduct this study for 2 more years to evaluate how corn responds to plant populations in a year of low lodging pressure.

Table 2. Harvest populations, percent lodging, grain yield, unharvestable ears, and yield loss of 38A24 at four planting rates in 2003.

Planting Rate	Harvest population	Lodging	Grain Yield	Ear Loss	Yield Loss
plants/acre	plants/acre	%	bu/acre	%	bu/acre
25,000	18420	1.6	165	0.5	0.6
30,000	21579	4.7	171	0.7	1.0
35,000	25088	6.1	180	1.9	2.0
40,000	27368	8.8	186	1.6	2.4

Table 3. Harvest populations, percent lodging, grain yield, unharvestable ears, and yield loss of DKC53-34 (RR/YGCB) at four planting rates in 2003.

Planting Rate	Harvest population	Lodging	Grain Yield	Ear Loss	Yield Loss
plants/acre	plants/acre	%	bu/acre	%	bu/acre
25,000	24700	2.5	187	0.7	0.6
30,000	28596	10.7	188	2.6	4.6
35,000	33158	16.9	184	2.1	4.2
40,000	37018	29.0	175	4.1	10.0

Postemergence Large Crabgrass Control in Field Corn

Weed Management

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Traditionally, postemergence (POST) control of large crabgrass and other annual grasses in field corn was done as a rescue operation when preemergence (PRE) herbicides failed due to a lack of rainfall for herbicide activation or when excessive rainfall prevented timely PRE application. Bladex was the product of choice for these situations because it had both PRE and POST activity against annual grasses. The loss of Bladex from the market and increased interest in total POST weed control programs has prompted research with several new herbicide products for use with conventional hybrids and for rescue applications when PRE herbicides have failed. Among the products of interest are Steadfast and/or Steadfast ATZ, Option, and Callisto.

Steadfast Products Replacing Basis Gold

In recent years, Basis Gold, a mixture of two sulfonylurea herbicides, Accent (nicosulfuron) and Matrix (rimsulfuron) in a l:l ratio pre-mixed with atrazine, became a mainstay for total POST weed control with conventional corn hybrids. Basis Gold is now being replaced in the market with Steadfast and Steadfast ATZ. Steadfast is a mixture of Accent and Matrix in a 2:1 ratio that can be tank-mixed with several herbicides for additional control of broadleaf weeds. Steadfast ATZ also has a 2:1 ratio of Accent and Matrix pre-mixed with atrazine making a product that is similar to Basis Gold. Total POST control programs with conventional hybrids depend on these products for large crabgrass control with mixed results. One of the limitations with these products is that the maximum labeled height for large crabgrass control is only 1 inch. Another limitation is the lack of residual control for late-emerging crabgrass. Labels for these products allow tank mixing these herbicides with acetamide herbicides (Micro-Tech/Partner, Frontier, Dual II Magnum) or with Prowl/Pendimax to provide residual control of late-emerging grasses, including large crabgrass.

Option Registered in NY State

Option is a new corn herbicide that was registered for use in NY State in May 2003. The active ingredient, foramsulfuron, is a sulfonylurea herbicide related to the active ingredients in Steadfast products. Option includes a safener along with the active ingredient. This safener reduces the potential injury from many of the tank-mix partners like dicamba (Banvel/Clarity). It is recommended that Option be used with methylated seed soil (MSO) and nitrogen fertilizer for best results. The use of non-ionic surfactants (NIS) or crop-oil concentrates (COC) with Option will result in unacceptable weed control. Although Option has POST activity against many annual weeds, the label recommends that a PRE grass herbicide followed by a POST Option application will provide the best results with large crabgrass. The maximum height/diameter for crabgrass should be no more than 2 inches. As with the Steadfast products, certain acetamide herbicides or Prowl can be tank-mixed with Option for residual annual grass control.

Callisto for Large Crabgrass Rescue

Mesotrione is the active ingredient in Callisto herbicide. Mesotrione is a member of a new herbicide family/class called triketones and provides corn growers with a new mode of action (pigment inhibitor) that is effective against species resistant to triazine and ALS inhibiting herbicides. Callisto was registered in NY State in June 2002 for annual broadleaf weed control in field corn and is not effective for control of most grass weeds. One exception is large crabgrass. The Callisto label claims "partial control" of large crabgrass with PRE applications and "control" when applied POST before large crabgrass exceeds 2 inches in height. Since it does not have activity against other annual grasses, Callisto would not be used for annual grass control in total POST programs unless large crabgrass was the only annual grass. It is more likely that Callisto would be used as a POST rescue treatment for large crabgrass.

Experimental Results

Field experiments have been conducted at the Valatie Research Farm to evaluate POST large crabgrass

control with these products the past 3 years. Unfortunately, large crabgrass pressure was not good in 2002 so discussion will be limited to results from 2001 and 2003. An experiment was conducted in 2001 to evaluate the efficacy of early postemergence (EPO) applications of Basis Gold and Steadfast alone, and in combinations with 1.8 pt/A of Prowl when crabgrass was 0.5 inch tall. In addition, Basis Gold and Steadfast were applied mid-postemergence (MPO) when crabgrass was 3 inches tall. Late-season crabgrass control with EPO applications of Basis Gold or Steadfast alone averaged 17% and yielded an average of 67 bu/A of grain corn. The EPO tank mixes of these herbicides with Prowl provided 91% crabgrass control and a yield of 87 bu/A. MPO applications averaged 44% control and yielded 63 bu/A. The untreated check yielded 15 bu/A. In a separate 2001 experiment, EPO activity of Basis Gold was compared with Steadfast or Option in combinations with atrazine. Early season crabgrass control averaged 70% for these three treatments but only 35% control in mid-August.

EPO (0.5 inch) and MPO (2 inch) crabgrass control with Steadfast ATZ, Option plus AAtrex, or Callisto plus AAtrex was evaluated in 2003. Early season crabgrass control was 89, 82, and 100% for Steadfast ATZ, Option, and Callisto treatments respectively in mid-June (Table 1). Late-season (mid-September) ratings showed excellent (92%) crabgrass control with Callisto. Late-season control with Steadfast ATZ and Option was 70 and 38% respectively. Tank-mixing 1.2 pt/A of Prowl with the Steadfast ATZ and Option treatments improved crabgrass control to 80 and 83% respectively (data not shown). Early and late season control ratings for a PRE standard treatment of Bicep Lite II Magnum plus Prowl was 99 and 100% respectively. While the untreated check produced a grain corn yield of only 75 bu/A, statistical variability made it difficult to detect differences in yield among the other treatments. When Callisto was applied MPO on 2-inch crabgrass, control was 94% but MPO applications of Steadfast ATZ or Option plus AAtrex controlled only 30 and 48% of the crabgrass respectively (data not shown).

Table 1. Large crabgrass control ratings and grain corn yields with preemergence (PRE) and early postemergence (EPO) herbicide applications at Valatie in 2003.

	Rate	When	Crabgrass Control (%)		Yield
Herbicides	Amt/A	Appl.	6/12	9/17	(Bu/A)
Bicep Lite II Magnum Prowl	1.1 qt 2.4 pt	PRE PRE	99	100	122
Steadfast ATZ* Clarity	14 oz 4 oz	EPO EPO	89	70	125
Option* AAtrex	1.5 oz 1.0 qt	EPO EPO	82	38	149
Callisto* AAtrex	3.0 oz 0.5 pt	EPO EPO	100	92	146
Untreated	-	-	0	0	75
LSD (0.05			6	11	39

*Applied w/ 1% (v/v) MSO and 2.5% (v/v) 28% UAN.

Conclusions

These results reinforce those from the 2001 experiments and suggest that an EPO (less than 1 inch crabgrass) application of Steadfast ATZ plus Banvel or Clarity *and* a reduced rate of a residual grass herbicide would likely be best for crabgrass control in a total postemergence weed control program with conventional hybrids. The promising, preliminary results with Callisto suggest that it may be the best option for postemergence rescue following failed PRE programs.

Nitrogen Management for Brown Mid Rib Sorghum Sudangrass: Results of Two Years of Studies at the Mt. Pleasant Research Farm

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Nutrient Management

Introduction

In the 2002 growing season, we conducted a study at the Mt Pleasant Research Farm in Tompkins County, NY, on the effects of N application rate (0, 100, 200, 300, 400 and 500 lbs/acre split-applied in two applications) and potassium application rate (0, 200, 400 lbs K_2O/acre split-applied in two equal applications as well) on yield and quality of brown mid rib sorghum sudangrass. The results of the 2002 growing season were published in "What's Cropping Up?" (2002) 13 (2): 1-3 and 6-7. The same trial was repeated in 2003. In this article we report on the N application effects on yield and quality in both trial years.

Materials and Methods

The soil was a silt loam Bath-Volusia soil, representative of a large portion of Southern Tier New York soils. At the start of the trial, the pH of the soil was 6.2 and the soil organic matter content was 3.2%. The site was initially classified as medium in phosphorus (5 lbs/acre Morgan extractable P), medium in zinc (0.54 lbs Morgan extractable Zn/acre), and high in potassium, calcium and magnesium (142 lbs K/acre, 2,355 lbs Ca/acre and 375 lbs Mg/acre). Potassium was applied in the form of muriate of potash (60% K_2O). Nitrogen applications were in the form of ammonium sulfate (21% N). All plots received the equivalent of 45 lbs of P_2O_5/acre and the entire trial was replicated four times.

Planting was done on June 14 in 2002 and on June 9 in 2003 using a John Deere grain drill at 60 lbs of seed per acre. In 2002, first and second harvest took place on July 30 and September 25, respectively. Both times, cutting height was 3-3.5 inch and harvest was initiated when the plots that received 150 lbs N/acre per cut had reached a height of 38-42 inches. In 2003, the first harvest was done on July 31 (35 inch stand height) and the second cut took place on September 26th when a stand height of 45 inches was reached.

We determined yield and took subsamples to determine moisture content, nutrient concentrations and forage feed quality. All samples were analyzed for total N, P, and K, neutral detergent fiber (NDF), and digestibility of neutral detergent fiber (dNDF at 30 hr) at the forage laboratory of DairyOne Cooperative Inc. in Ithaca, NY. Milk2000 version 7.54, a software model developed at the University of Wisconsin, was used to estimate milk yields in lbs per ton and in lbs per acre (http://www.uwex.edu/ces/forage/pubs/milk2000.xls). We used the alfalfa-grass Milk2000 worksheet with standard values for neutral detergent insoluble crude protein (NDICP; 2.4% on a dry matter basis) and ether extract (3.6% on a dry matter basis) as reported for sorghum sudangrass silage in the 2001 Nutrient Requirements for Dairy Cattle (National Research Council, 2001). The 30 hour dNDF was multiplied by 1.16 to obtain an estimate of the dNDF at 48 hours (J.H. Cherney, unpublished, 2003). Soil samples (0-8 inches) were taken at planting and immediately after the first and second harvests. Samples were analyzed for pH, Morgan extractable P, K, Ca, Mg, nitrate and soluble salts. As mentioned above, in this article, we present and discuss the results of our N rate study. The effects of K application will be addressed in another article.

Results and Discussion

In 2002, dry matter yields increased to 9.8 tons/acre (35% dry matter) with the addition of 200 lbs of N or more from 4.2 tons/acre without N applications. In 2003, 4.7 tons/acre were produced without the addition of N while a maximum yield was obtained with the addition of 150 lbs N/acre per cut. Greater N applications did not result in yield increases; rather a yield decrease was seen with the addition of 250 lbs N as compared to 150 lbs N/acre. This could be caused by elevated soluble salt levels and suboptimum pH (5.0-5.3) after two growing seasons with ammonium sulfate applications greater than 150 lbs N/acre per cut without further lime application. Table 1 shows the yields averaged over the two years.

Table 1: Yield, predicted milk production, nitrogen uptake, nitrogen uptake efficiency, postharvest soil nitrate and soluble salts as affected by N application rates in a 2-cut brown mid rib sorghum sudangrass trial at Mt Pleasant, NY, averaged over 2002 and 2003.

Total N applied	Yield (35% dm)	Estimated Milk Production		N uptake	N uptake efficiency	Postharvest nitrate	Soluble Salts
lbs/acre	tons/acre	lbs/ton	lbs/acre	lbs/acre	%	ppm	mmho
0	4.4 d	3179 a	4929 c	40 e	-	0 d	15 d
100	7.5 c	3126 a	8168 b	75 d	36 ab	0 d	19 cd
200	8.9 ab	3107 a	9693 a	110 c	35 ab	0 d	24 c
300	9.7 ab	3102 a	10481 a	160 b	40 a	6 c	36 b
400	9.9 a	3099 a	10705 a	179 a	35 ab	18 b	51 a
500	9.7 ab	3134 a	10638 a	190 a	30 b	24 a	50 a

Note 1: Milk yield was predicted using Milk 2000 (http://www.uwex.edu/ces/forage/articles.htm#milk2000).
Note 2: Average values *within columns* with different letters (a,b,c) are statistically different ($\alpha = 0.05$)

Nutrient Management

Nitrogen addition increased crude protein and lowered NDF but did not affect dNDF once N was applied (Table 2). In both years, milk/acre strongly reflected sorghum sudangrass silage yield (r^2=0.99 in 2002 and r^2=0.97 in 2003). Predicted milk production in lbs/acre increased from about 5,000 lbs of milk per acre without N addition to 10,705 lbs of milk (first and second cut and both years combined) with the addition of 200 lbs of N/acre per cut.

Nitrogen uptake ranged from about 40 lbs of N without N fertilizer addition to 190 lbs of N/acre (2-year average) when 500 lbs of N were applied. Nitrogen uptake efficiencies were low in both years (Table 1). Averaged over two years, the economic optimum N rate assuming fixed costs of $178/acre, a nitrogen fertilizer cost of $0.30/lb and a forage value of $100 per ton dry matter, was 135 lbs N/acre per cut. Residual N levels (N left in the soil profile following the second cut) were of environmental concern with application rates greater than 150 lbs N per cut or greater in both years.

Conclusion

Nitrogen fertilization of BMR sorghum sudangrass reduced NDF but did not affect the fiber digestibility of the forage. As expected, fertilization of a grass with N resulted in a significant increase in crude protein. Dry matter yield was highly correlated with milk yield so the changes in NDF and CP due to N fertilization seemed to have little impact on milk yield. Averaged over the two years, the optimum economic N rate was 135 lbs N/acre per cut. Application rates greater than 150 lbs N/acre per cut are undesirable as these cause high end-of-season nitrate levels.

The N recommendation for corn for this particular site is 90 lbs N for the season given a yield potential of 16 tons of silage at 35% dry matter. Results so far (on a site that has no manure history) suggest that this crop should be fertilized as an intensively managed grass rather than corn and that corn fertilizer N recommendations need to be tripled for optimum yield of brown mid rib sorghum sudangrass. However, trials in Columbia County indicate that N fertilizer applications can be reduced to no more than 50 lbs N/acre per cut where manure was applied recently. Nitrogen recommendations for this crop should not be based on results from just two years and only one or two locations. The trial at the Mt Pleasant Research Farm will be continued in 2004 and similar trials will be conducted in St Lawrence, Jefferson, Clinton and Essex County this coming growing season.

Table 2: Effect of N application on quality of BMR sorghum sudangrass grown at the Mt Pleasant Research Farm, NY, 2002 and 2003 growing season.

N applied Lbs N/acre	Crude Protein (%of DM)	NDF (% of DM)	dNDF (% of NDF)
Per cut	First Cut 2002 and 2003 Combined		
0	8.29 d	64.7 a	82.9 a
50	9.39 d	64.7 a	78.8 ab
100	11.29 c	64.2 a	78.3 b
150	15.82 b	62.1 b	77.2 b
200	16.90 b	61.7 b	77.0 b
250	18.79 a	61.0 b	77.5 b
	Second Cut 2002 and 2003 Combined		
0	7.54 d	64.2 a	78.4 a
50	8.77 d	62.5 b	78.9 a
100	10.90 c	61.4 b	77.5 a
150	13.71 b	59.3 c	77.0 a
200	15.47 b	59.1 c	76.6 a
250	16.18 a	58.7 c	77.8 a

Note 1: Average values *within columns* with different letters (a,b,c) are statistically different ($\alpha = 0.05$).

References

1. Ketterings, Q.M., T.W. Katsvairo, J.H. Cherney and T.F. Kilcer (2003). Nitrogen management for brown mid rib sorghum sudangrass. Results of the 2002 Mt Pleasant trials. "What's Cropping Up?" 13(2): 1-3.
2. Ketterings, Q.M., T.W. Katsvairo, J.H. Cherney and T.F. Kilcer (2003). Potassium management for brown mid rib sorghum sudangrass. Results of the 2002 Mt Pleasant trials. "What's Cropping Up?" 13(2): 6-7.
3. National Research Council (2001). Nutrient requirements of dairy cattle. 7th edition. National Research Council. National Academy Press, Washington, D.C. 408 pages.

Acknowledgments

This research was funded with grants from the Phosphate and Potash Institute and Townsend & Garrison Inc. Ammonium sulfate was donated by Honeywell Inc. For further information on BMR sorghum sudangrass in NY contact Thomas Kilcer at the Rensselaer Cooperative Extension Office at tfk1@cornell.edu or 518-272-4210. You could also visit the BMR sorghum sudangrass website at http://nmsp.css.cornell.edu/projects/bmr.asp.

Potato Leafhopper: Resistant Alfalfa and a Section 18 for Mixed Stands

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Pest Management

Leafhopper Resistant Alfalfa

Recent research trial results conducted by Dr. Don Viands and Dr. Julie Hansen have indicated that the current generation of potato leafhopper (PLH) resistant alfalfa has both improved levels of resistance in the seeding year and improved yield compared to previous generations of PLH resistant alfalfa. Results for their 2003 alfalfa trials indicate the newest generation of PLH resistant alfalfa out yields conventional alfalfa varieties both when PLH is present in economic numbers and when PLH is absent from the field. In addition, forage quality of the resistant varieties are equivalent to the conventional varieties when PLH is absent and the forage quality of resistant varieties is superior to unsprayed conventional varieties when PLH is present in the field in economic numbers. Price quotes from seed dealers indicate the price premium for PLH resistant alfalfa ranges from $0-$40 per 50 lb bag. If a 50 lb bag plants 3 acres, the cost of PLH resistant alfalfa ranges from $0 to $13 per acre distributed across the life of the stand. If the alfalfa stand is maintained for 4 years, the cost of PLH control ranges from $0-$3 per season. Conventional alfalfa varieties cannot be treated for PLH control for this low cost. In addition, the increased forage quality of the alfalfa during times of economic PLH pressure will more that offset the small cost of PLH resistant alfalfa seed.

With the increased yield and level of resistance in the newest generation of PLH resistant alfalfa, all new seedings planted in 2004 and during the next few years should be one of the newer varieties of PLH resistant alfalfa. These newer resistant varieties should be used in both clear seeded alfalfa stands and mixed stands of alfalfa and grass.

Section 18 Specific Exemption granted for Warrior applications to control Potato Leafhopper in Alfalfa/Clover/Grass Mixed Seedings.

The Environmental Protection Agency hereby grants a specific exemption under the provisions of section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to the New York Department of Environmental Conservation for the use of lambda-cyhalothrin formulated as Warrior with Zeon Technology, on alfalfa/clover/grass mixed stands to control the potato leafhopper. This specific exemption is subject to the conditions and restrictions set forth in your request, as well as the following:

1. The New York Department of Environmental Conservation is responsible for ensuring that all provisions of this specific exemption are met. It is also responsible for providing information in accordance with 40 CFR 166.32. This information must be submitted to EPA Headquarters and to the EPA Regional Office.

2. The product, Warrior with Zeon Technology (EPA Reg. No. 100-1112) manufactured by Syngenta Crop Protection, Inc., may be applied. All applicable directions, restrictions, and precautions on the federal label and section 18 use directions submitted with your application must be followed.

3. The Effective Date of this Specific Exemption is 6/1/2004. This specific exemption expires on August 31, 2004.

4. A maximum of 0.24 pints (0.03 lbs a.i.) per acre may be applied per cutting; a total of 0.96 pints (0.12 lbs a.i.) per acre may be applied per season.

5. A maximum of 570,000 acres of alfalfa/clover/grass mixed stands may be treated in New York State.

6. Applications can be made using air or ground equipment using sufficient water to obtain full coverage of the foliage. Do not apply within one (1) day of harvest for forage or within seven (7) days of harvest for hay. A 24-hour restricted entry interval (REI) is in effect for treated areas.

7. Time-limited tolerances have been established for residues of lambda-cyhalothrin on grass forage at 5.0 ppm and grass hay at 6.0 ppm. These time-limited tolerances are scheduled to expire on December 31, 2005.

8. Minimal adverse effects are expected for terrestrial animals, but significant direct negative effects are expected for aquatic animals if lambda-cyhalothrin enters aquatic habitats via spray drift or runoff. Aquatic animals are extremely sensitive to this pyrethroid. The use directions had the following restrictions to mitigate concerns regarding bees and aquatic environments:

a. Avoid applications when bees are actively foraging by applying during the early morning or during the evening hours.

b. Do not apply by ground equipment within 25 feet, or by air within 150 feet of lakes, reservoirs, rivers, permanent streams, marshes, pot holes, or natural ponds. A 25 foot vegetated non-cropped buffer strip untraversed by drainage tiles must be maintained between a treated field and a coastal salt marsh or stream that drains into a coastal salt marsh for both aerial and ground application.

In addition, lambda-cyhalothrin is classified as a restricted use pesticide due to its toxicity to fish and aquatic organisms. It is for retail sale to and use only by Certified Applicators, or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

9. EPA shall be immediately informed of any adverse effects resulting from the use of this pesticide in connection with this exemption.

Calendar of Events

June 3, 2004	Small Grains Field Day, Aurora, NY
July 7, 2004	Weed Science Field Day, Valatie, NY
July 8, 2004	Seed Growers Field Day, Ithaca, NY
July 13, 2004	Weed Science Field Day, Aurora, NY
July 11-14, 2004	Northeastern ASA/SSSA Branch Meeting, Bordentown, NJ
July 31-Aug 4, 2004	American Phytopathological Society Annual Meeting, Anaheim, CA
October 6-8, 2004	Northeastern Division APS Meeting, State College, PA
October 26, 2004	Field Crop Dealer Meeting, Comfort Suites, 7 Northside Drive, Clifton Park, NY
October 27, 2004	Field Crop Dealer Meeting, Ramada Inn, 141 New Hartford St., New Hartford, NY
October 28, 2004	Field Crop Dealer Meeting, Batavia Party House, 5762 E. Main Rd., Batavia, NY
October 29, 2004	Field Crop Dealer Meeting, Auburn Holiday Inn, 75 North St., Auburn, NY
Nov 1-4, 2004	ASA-CSSA-SSSA Annual Meeting, Seattle, WA

What's Cropping Up? is a bimonthly newsletter distributed by the Crop and Soil Sciences Department at Cornell University. The purpose of the newsletter is to provide timely information on field crop production and environmental issues as it relates to New York agriculture. Articles are regularly contributed by the following Departments at Cornell University: Crop and Soil Sciences, Plant Breeding, Plant Pathology, and Entomology. **To get on the mailing list, send your name and address to Pam Kline, 234 Emerson Hall, Cornell University, Ithaca, NY 14853.**

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