What's Cropping Up?

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Manure N Conservation with Chisel Plow vs Aeway Incorporation

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Introduction

Surface application of manure can lead to odor and runoff concerns as well as ammonia-N volatilization losses. Injection or full incorporation of manure directly following application can reduce odor and volatilization losses but injection is not always practical and complete incorporation by heavy tillage is incompatible with reduced-tillage systems. However, there are many questions relating to how well light tillage equipment, such as the Aerway™ implement, conserve N. With funds from Altria and the New York Farm Viability Institute (NYFVI) we compared corn yield with these treatments: (1) sidedress inorganic N; (2) manure surface application; (3) manure immediately chisel-incorporated and (4) manure immediately Aerway-incorporated.

Manure Incorporation Study

The trial was conducted from 2005 to 2007 at the Musgrave Research Farm (Aurora, NY). All treatments received a starter N application of 30 lbs N/acre. The inorganic N treatment received 120 lbs N/acre applied at sidedress time. Manure was applied approximately two weeks prior to corn planting (7,500 gal/acre in 2005, 9,000 gal/acre in 2006, and 9,500 gal/acre in 2007).

Manure application rates were set to meet crop N needs after three annual applications only. This design allowed for: (1) comparison of N use efficiency of three manure application treatments in years 1 and 2 (in all 3 manure treatments, available N applied with manure was less than the expected crop N needs); and (2) comparison of available N from incorporated manure (manure N credits) and the inorganic N control in the third year of the study. Soil samples (0-8 inch and 0-12 inch depth) taken just prior to manure application, at planting, sidedressing, and harvest were analyzed for soil nitrate.

Table 1: Application rates of available N, total P and total K and crop removal of P and K for each of the four treatments in a manure application method study (TBD, to be determined with the study).

Treatment	2005 Nutrient addition Manure	2005 Nutrient addition Fertilizer	2005 Nutrient addition Total	2005 Crop Removal	2006 Nutrient addition Manure	2006 Nutrient addition Fertilizer	2006 Nutrient addition Total	2006 Crop Removal	2007 Nutrient addition Manure	2007 Nutrient addition Fertilizer	2007 Nutrient addition Total	2007 Crop Removal
	lbs N/acre											
Surface	41	30	71	-	44	14	58	-	51	21	72	-
Chisel	105	30	136	-	118	14	132	-	122	21	144	-
Aerway	TBD	30	TBD	-	TBD	14	TBD	-	TBD	21	TBD	-
Inorganic N	0	150	150	-	0	134	134	-	0	141	141	-
	lbs P2O5/acre											
Surface	66	30	96	44	79	29	108	28	57	21	79	36
Chisel	66	30	96	51	79	29	108	30	57	21	79	35
Aerway	66	30	96	50	79	29	108	30	57	21	79	40
Inorganic N	0	30	30	57	0	29	29	37	0	21	21	36
	lbs K2O/acre											
Surface	181	30	212	30	175	29	204	19	172	21	194	25
Chisel	181	30	212	35	175	29	204	21	172	21	194	24
Aerway	181	30	212	35	175	29	204	21	172	21	194	27
Inorganic N	0	30	30	39	0	29	29	26	0	101	101	25

*Average values with different letters (a,b,c) are statistically different (a = 0.05).

Nutrient Management

Results

N Conservation

Despite very different weather conditions over the three years of the trial, 12" soil nitrate values, taken before manure application ("pre-application"), at planting and at sidedressing time, followed similar trends over the three years. Soil samples taken in late spring prior to manure application showed very low base-line nitrate values (Table 2), most likely reflecting low soil temperatures in early spring inhibiting organic N mineralization prior to planting.

Table 2: Soil nitrate content (0-12 inch depth) as impacted by manure application method. Actual application rates are shown in Table 1.

Timing	Treatment	2005	2006	2007
		ppm (0-12 inch depth)		
pre-appplication	surface	1.93 a	0.89 a	0.77 a
	chisel	2.52 a	0.00 a	0.00 a
	aerway	2.47 a	2.76 a	0.00 a
	Inorganic N	2.57 a	1.13 a	0.00 a
at planting	surface	2.98 b	10.69 a	13.73 a
	chisel	10.99 a	14.65 a	13.62 a
	aerway	9.52 a	14.30 a	12.63 a
	Inorganic N	0.00 b	3.80 b	0.82 b
at sidedress	surface	10.10 c	5.29 a	16.74 a
	chisel	19.34 a	11.42 a	23.86 a
	aerway	14.51 b	9.86 a	18.82 a
	Inorganic N	8.79 c	5.44 a	6.95 b
at harvest	surface	0.00 a	0.00 a	10.18 a
	chisel	0.00 a	1.07 a	12.59 a
	aerway	0.00 a	0.00 a	12.93 a
	Inorganic N	0.00 a	0.00 a	12.55 a

*Average values with different letters (a,b,c) are statistically different (□ = 0.05).

The inorganic N treatments showed the lowest soil nitrate levels at planting, which is not surprising since no N had been applied yet; any changes in nitrate values between the pre-application and the planting time sampling was due to N mineralization only. NO3 results for samples taken at planting showed no significant difference between chisel plow and Aerway incorporation. The surface application (no incorporation) resulted in lower soil nitrate levels in years 1 and 2 but not in year 3. Soil nitrate levels at sidedressing time (when the corn was 6 - 12 inches tall) were somewhat variable but showed the same trends in each of the years. In 2005 and 2006 the soil was very wet from the time of planting until sidedressing. In both years, there were no significant differences in soil nitrate of the inorganic N treatment and the surface application suggesting high inorganic N loss or reduced organic N mineralization from manure. The mean nitrate levels in the chisel plow treatment were slightly higher than in the Aerway treatment throughout the experiment, but only in 2005 were these differences significant. Both methods of incorporation resulted in mean nitrate levels that were higher than the surface treatment but the differences were significant in 2005 only.

In the wet years of 2005 and 2006 there was very little nitrate left at harvest, while in 2007 (dry year) N levels were lower than at sidedressing time but above 10 ppm in all four treatments (Table 2). Our results reflect that in wet years almost all of the nitrate released with the application of manure and fertilizer or through mineralization and nitrification of soil organic matter was used by the crop and/or lost from the 0-12 inch soil layer while a considerable amount of nitrate can remain in the soil profile at harvest in dry years such as 2007. Given the humid climate in the Northeastern US, nitrate remaining in the soil at the end of the growing season will likely be lost before the subsequent growing season, indicating equal post-harvest soil N loss potential for all four treatments for the 2007 crop year.

Yield Response

The reported yield potential for this site was 135 bushels/acre. Low yields in 2006 were due to a very wet growing season combined with drainage issues in the field, while 2007 was very dry particularly during criti-

cal times for corn growth. As expected, the inorganic N treatments resulted in the highest yields in both 2005 and 2006 (Table 3).

Table 3: Corn grain yields and plant populations at harvest impacted by manure application method. Actual application rates are shown in Table 1.

Year	Treatment	Yield bu/acre	Plant Pop. plants/acre
2005	surface	131 b	29421 a
2005	chisel	151 ab	26385 b
2005	aerway	149 b	29894 a
2005	Inorganic	170 a	30931 a
2006	surface	82 b	28913 a
2006	chisel	89 b	27606 a
2006	aerway	90 b	27279 a
2006	Inorganic	111 a	28677 a
2007	surface	107 ab	26281 a
2007	chisel	103 b	25011 a
2007	aerway	118 a	26245 a
2007	Inorganic	106 b	25120 a

*Average values with different letters (a,b,c) are statistically different (= 0.05)

In 2005 and 2006, there was a trend toward Aerway and Chisel incorporation methods producing higher yields than surface application but means were not significantly different. The inorganic treatment significantly out yielded the manure application treatments. This was expected since our application rates were set to be somewhat N deficient in 2005 and 2006.

There was no significant difference between chisel-incorporated manure and the inorganic N control in 2007. This was expected, given three years of manure N credits in 2007 but could also have been impacted by dry weather. Weather could also explain why the surface application yielded equal to chisel and inorganic N treatments, despite lower available N; in addition to the soil remaining undisturbed for an additional week, it also had a coating of manure on the surface during that time, further helping to conserve soil moisture.

The Aerway incorporation resulted in higher yield than the chisel incorporation which may reflect enhanced moisture conservation resulting from reduced soil disturbance with the Aerway.

Conclusions

The data from this experiment suggest Aerway aeration directly following manure application is equally effective in conserving ammonium-N from manure as chisel plow incorporation. Both incorporation methods, when applied in the spring directly following manure application, provide greater N conservation benefit than surface application of manure. However, an additional year is needed given 2007 was a dry year, and the study needs to be expanded with additional sites covering various soil types and growing conditions. We invite producers with an interest in comparing various application methods to contact Quirine Ketterings (255-3061 or qmk2@cornell.edu).

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Crop Management

Recommended Corn Silage Hybrids

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Cornell University evaluates 95-115 day corn silage hybrids at two locations in central/western NY and 75-100 day corn silage hybrids at two locations in Northern New York. We arrange the hybrids in the field into 5-day relative maturity (RM) groups (i.e. 95-100, 101-105 day hybrids, etc.) and harvest one or more RM groups at a particular site when the hybrids are in the 60-70% moisture range. We also take a 1000-gram sample at harvest to determine moisture and to run silage quality analyses on all four replications of each hybrid at each site.

MILK2006, the updated MILK2000 spreadsheet from the University of Wisconsin, calculates milk/ton, a silage quality index, derived from neutral detergent fiber (NDF), NDF digestibility, crude protein, ash, and starch concentrations in the quality analyses. MILK2006 also calculates milk yield/acre of each hybrid by combining silage yield and milk/ton values. We recommend hybrids that have comparative milk yields of greater than 100 (the average milk yield of each hybrid RM group is adjusted to 100 and hybrids within the RM group with above-average milk yields have values above 100). We

Table 1. Recommended 95-115-day corn silage hybrids in New York based on tests in Cayuga Co. (Aurora Research Farm) and Livingston Co. (Southview Farms).

Brand	Hybrid	Comparative Silage Yield	Comparative Milk/Ton	Comparative Milk Yield	Years in Test
		----------%----------			no.
		95-100 day Relative Maturity			
Mycogen	TMF2T497	112	100	111	2
Dyna-Gro	54T42	109	100	109	1
Garst	8688GT	105	102	107	2
Hyland	HL S047	102	102	104	5
LICA	946LRR	103	101	104	2
Growmark FS	4955XRR	103	101	103	3
		101-105 day Relative Maturity			
T.A. Seeds	TA557-00F	109	101	110	4
Hyland	HL S058	107	97	104	5
Pioneer	35F40	103	102	104	1
Garst	8693CB/LL	102	103	104	2
Doebler's	555XY	100	103	103	1
Dyna-Gro	55P86	107	96	103	1
DEKALB	DKC55-12	103	100	103	2
NK	N48-R3	102	101	103	2
Mycogen	F2F566	96	107	102	1
		106-110 day Relative Maturity			
Growmark FS	6277XRR	108	100	108	1
Pioneer	34A89	109	100	108	3
Hyland	HL S067	107	100	107	7
Doebler's	632ARR	107	100	106	1
Garst	8381HT/LL	104	100	105	1
DEKALB	DKC57-47	102	100	102	1
Pioneer	34A20	101	103	102	2
Pioneer	33D14	106	96	101	1
Pioneer	33T59	101	101	101	1
		111-115 day Relative Maturity			
T.A. Seeds	TA689-00F	111	100	109	2
Pioneer	34B38	101	101	108	3
Pioneer	33A88	104	99	104	1
DEKALB	DKC61-66	101	102	103	2
Dyna-Gro	57P12	103	101	103	2

have listed the comparative milk yields as well as comparative silage yields and milk/ton values for hybrids that have performed above-average in our trials (Tables 1 and 2). Hybrids should only be compared within RM groups. Hybrids that have been tested more than 1 year should be given more weight because they have performed above-average in more environments.

Hybrids in the 95-100 day RM maturity group that performed well in previous years performed exceptionally well once again. Mycogen's TMF2T497 again yielded exceptionally well as did HL S047 from Hyland and 946 LRR from LICA. Garst's 8688GT and 4955XRR from Growmark FS continued to have high milk/ton values. Also the new hybrid, 54T42 from Dyna-Gro had a much-above average silage yield in 2007.

Previous recommended hybrids in the 101-105 RM continued to perform well in 2007, including HL S058 from Hyland and TA557-00F from T.A. Seeds with much-above average silage yields, and 8693CB/LL from Garst with an above-average milk/ton value. A new hybrid from Pioneer, 35F40, performed exceptionally well in 2007 because of above-average silage and milk/ton values. Other new hybrids that did well in 2007 include 55P86 from Dyna-Gro because of above-average silage yield and 555XY from Doebler because of an above-average milk/ton value. A new brown midrib hybrid, F2F566 from Mycogen, performed well in 2007 with silage yields only slightly below-average and the milk/ton value much-above average.

Table 2. Recommended 75-100-day corn silage hybrids in Northern NY based on tests in St. Lawrence Co. (Greenwood Farms) and Clinton Co. (Miner Institute).

Brand	Hybrid	Comparative Silage Yield	Comparative Milk/Ton	Comparative Milk Yield	Years in Test
		----------%			
		75-85 day Relative Maturity			
T.A.Seeds	TA240-11	111	101	112	1
Doebler's	377BWR	108	102	110	2
Hyland	HL S011	107	99	105	5
		86-90 day Relative Maturity			
Pioneer	38N87	108	101	109	1
Hyland	HL SR35	109	99	107	1
Hyland	HL S034	108	100	107	6
Garst	8866	104	98	102	1
NK	N29-A2	98	103	103	3
		91-95 day Relative Maturity			
Mycogen	TMF2N422	120	104	119	1
T.A.Seeds	310-02F	118	99	116	1
Pioneer	38K47	115	100	115	1
LICA	946LRR	109	101	110	2
Doebler's	468RB	112	98	110	1
Growmark FS	EX2604	106	101	108	1
Dyna-Gro	53K69	106	100	106	1
Mycogen	TMF2L416	106	100	106	1
DEKALB	DKC45-82	102	99	101	1
		96-100 day Relative Maturity			
DEKALB	DKC50-48	108	102	109	1
LICA	964L	108	100	106	2
LICA	99 S27	108	99	100	1
LICA	99 BS7	104	102	106	1

Previous recommended hybrids in the 106-110 day RM group, including HL S067 from Hyland and 34A89 from Pioneer, had outstanding yields in the 106-110 day RM group in 2007. Also, the new hybrids 6277XRR from Growmark FS, 632ARR from Doebler's, and 33D14 from Pioneer yielded exceptionally well in 2007. Other new hybrids that performed well in the 106-110 day RM group in 2007 include 33T59 from Pioneer because of its high milk/ton value and DKC57-47 from DEKALB because of above-average silage yields.

Previous recommended hybrids, TA689-00F from T.A. Seeds and 34B38 from Pioneer, yielded exceptionally well in the 111-115 day RM group in 2007. Also, previous recommended hybrids, DKC61-66 from DEKALB and 57P12 from Dyna-Gro, continued to have above-average milk/ton values. A new hybrid, 33A88 from Pioneer also had above-average silage yield in 2007.

Previous recommended hybrids, 377BWR from Doebler's and HL S011 from Hyland, had excellent yields in the 75-85 day RM group in 2007. A new hybrid, TA240-11 from T.A. Seeds, also yielded exceptionally well in 2007, especially at the St. Lawrence Co. site.

Three new hybrids, 38N47 from Pioneer, HL SR35 from Hyland, and 8866 from Garst, yielded exceptionally well in the 86-90-day RM group in 2007. The hybrid, HL S034 from Hyland, which has been in the corn silage hybrid trial in NNY for 6 years, had the highest numerical yield in the 86-90 day RM group in 2007. The previously recommended hybrid, N29-A2 from Northrup King, continued to have above-average milk/ton values in 2007.

New hybrids dominated the 91-95 day RM group in 2007 with TMF2N422 from Mycogen, TA310-02F from T.A. Seeds, and 38K47 from Pioneer, yielding much-above average in 2007. Other new hybrids that yielded above-average included EX2604 from Growmark FS, 53K69 from Dyna-Gro, TMF2L416 from Mycogen, and DKC45-82 from DEKALB. The previously recommended hybrid, 946LRR from LICA, continued to have above-average yield in 2007.

A new hybrid, DKC50-48 from DEKALB, had much-above average yield and milk/ton in the 96-100 day RM group in 2007. The previously recommended hybrid, 964L from LICA, had the highest numerical yield in the 96-100 day RM group in 2007. New hybrids from LICA that performed well include 99 S7 with much-above average yield and 98 BS7 with a much-above average yield and milk/ton value.

Conclusion

Hybrid selection is one of the most important management practices that affect corn silage yield and quality. With the recent rise in corn grain prices, hybrid selection for corn silage has become even more important. Dairy producers should make an informed management decision, based on actual silage yield and quality data from New York, before selecting hybrids for the coming year. We urge seed companies to enter their hybrids in our corn silage hybrid testing program so New York dairy producers can make informed decisions in selecting their hybrids.

Recommended Roundup Ready Soybean Varieties In Central/Western New York

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Crop Management

New York farmers planted over 200,000 acres to soybeans in 2007 and averaged 37 bu/acre in yield, despite the very dry conditions in central, and parts of western and northern NY. Soybean prices have skyrocketed to close to $10.00/bu locally so some soybean growers will realize significant profit this year. Varieties have shown yield differences of 10 bu/acre in our variety trials so variety selection is a management practice that strongly determines how much profit that growers realize. The varieties in Table 1 are our recommended varieties for central/western NY, based on our tests in Cayuga and Livingston Co. The varieties in Table 2 are our recommended varieties for Northern NY, based on our tests in Jefferson and Clinton Co. We only recommend varieties that have average relative yields of more than 100% (100% relative yield equals the mean yield of the test). Varieties that have been tested more than one year have performed well over different growing seasons in NY so more consideration should be given to those varieties. When looking at the relative yields in Tables 1 and 2, only compare the relative yields of varieties within the same maturity group.

Table 1. Relative yields of recommended Group I and Group II Roundup Ready soybean varieties for Central/Western New York, based on tests in Cayuga and Livingston Co.

VARIETY	BRAND	RELATIVE YIELD (%)	YEARS IN TEST
		GROUP I VARIETIES	
AG1903	Asgrow	110	4
AG1802	Asgrow	108	1
HS122A	Growmark FS	108	1
SG1405	Seedway	107	1
HS199	Growmark FS	107	4
TS1440R	T.A.Seeds	105	1
TS1880R	T.A. Seeds	103	2
EX1207	Growmark FS	101	1
S19-R5	NK	101	4
		GROUP II VARIETIES	
AG2002	Asgrow	109	1
S24-J1	NK	107	1
AG2204	Asgrow	106	2
AG2802	Asgrow	106	2
35C23	UAP	105	1
34K22	UAP	104	1
TA2560R	T.A. Seeds	103	3
S21-N6	NK	102	2
31D20	UAP	102	1
HS217	Growmark FS	101	3
SG2205	Seedway	101	3
33D27	UAP	101	1

Crop Management

The Aurora site was exceptionally dry this year (7.5 inches or rain from May 1 through September 7th) and yields averaged only 34 bu/acre. Although the Livigston Co. site was also dry, the deeper soils at this site prevented severe drought stress and yields averaged 66 bu/acre. Consequently, varieties that performed well at both sites showed excellent yield stability. When averaged across all varieties entered in our central/western NY tests, Group I varieties yielded 2 bu/acre less than Group II varieties at Cayuga Co. and 4 bu/acre less at Livingston Co.

New Group I varieties that did very well in 2007 include AG1802 from Asgrow , H122A from Growmark FS, SG1405 from Seedway, and TS1440R from T.A. Seeds. The late Group l variety, AG1903 from Asgrow, continued to perform well in NY and still remained the Group l variety with the highest relative yield when averaged across years.

New Group II varieties, AG2002 from Asgrow and S24-J1 from Northrup King, yielded exceptionally well in New York in 2007. Four new Group ll varieties from UAP,35C23, 34K22, 31D20, and 33D27, all yielded above-average in 2007. The previously recommended variety, AG2204 from Asgrow, also yielded exceptionally well in 2007 as did the previously recommended AG2802 from Asgrow. Also, TS2560R from T.A. Seeds, HS217 from Growmark FS, and SG2205 from Seedway continue to have above-average yield in The Group ll maturity group.

The Sackets Harbor site in Jefferson Co. was exceptionally dry, especially in August and the first half of September and yields averaged only 29 bu/acre at this site. In contrast, growing conditions were almost perfect at Chazy in Clinton Co. and yields averaged 72 bu/acre. Again, any varieties that yielded well at both sites in 2007 showed excellent yield stability.

New Group I varieties that yielded exceptionally well in Northern NY in 2007 included AG1802 from Asgrow, EXP1408 from Seedway, and EX1707 from Growmark FS. Previously recommended Group l varieties that also did exceptionally well in 2007 included TS1880R and TS1440R from T.A. Seeds. When averaged across years, HS199 from Growmark FS also has an above-average yield.

A new Group II variety that yielded above-average in NNY in 2007 was AG2002 from Asgrow. Also, the previously recommended HS217 from Growmark FS yielded exceptionally well in 2007. We recommend these Group ll varieties only in western Jefferson Co, if planted in mid-May, because of the shorter growing season in Northern NY. We do not recommend Group II varieties in other regions of Northern NY.

Conclusion

Variety selection strongly influences yield and subsequent profit. Commercial varieties do not have soybean rust or soybean aphid resistance yet so Maturity Group and yield continues to be the most important factors in variety selection. Correct soybean variety selection can result in huge profit differences so growers should consider all sources of information when selecting varieties.

Table 1. Relative yields of recommended Group I and Group II (only close to Lake Ontario) Roundup Ready soybean varieties for Northern New York, based on tests in Jefferson and Clinton Co.

VARIETY	BRAND	RELATIVE YIELD (%)	YEARS IN TEST
		GROUP I VARIETIES	
AG1802	Asgrow	110	1
TS1880R	T.A. Seeds	109	2
EXP1408	Seedway	107	1
HS199	Growmark FS	104	4
EX1707	Growmark FS	103	1
TS1440R	T.A. Seeds	101	2
		GROUP II VARIETIES	
AG2002	Asgrow	104	1
HS217	Growmark FS	102	2

Distinct and Status Bring New Features to Dicamba Herbicide

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Weed Management

Dicamba, a synthetic plant auxin or plant growth regulator (Site of Action Group 4 Herbicide), is the active ingredient in a product that most of us came to know as Banvel, a common field corn herbicide. Although this herbicide has been around for more than 40 years, it has undergone several changes that have resulted in new products. Banvel, the dimethylamine salt of dicamba, had a reputation for spray and/or vapor drift that could injure sensitive crops. This was of particular concern in the Midwest where corn and soybeans are often grown in adjacent fields. In an effort to minimize the effects of this off-target movement, the diglycolamine salt was introduced as Clarity for use on field corn. In addition, the sodium salt of dicamba has appeared in the pre-mixes NorthStar (with primisulfuron, the active ingredient in Beacon), Yukon (with halosulfuron, the active ingredient in Permit), Distinct (with diflufenzopyr), and most recently Status (with diflufenzopyr and isoxadifen).

Advantages of Distinct and Status

Dicamba is rapidly absorbed by foliage and roots and readily translocated throughout plants. It accumulates in meristems (growing points) and other developing plant parts at higher concentrations than natural auxins and produces uncontrolled growth and plant death. Diflufenzopyr, the other active ingredient in Distinct, blocks transport of dicamba and natural auxins away from growing points. This results in an overwhelming accumulation of dicamba in these regions of active growth and increased herbicidal activity. The most recent incarnation of dicamba adds one more active ingredient, isoxadifen, to the mix. Isoxadifen improves the safety of dicamba and other herbicides on corn. The mixture of dicamba, diflufenzopyr, and isoxadifen is known as Status. Both Distinct and Status were registered by DEC for use on field corn in June 2007.

Advantages of having dicamba formulated with both diflufenzopyr and the safener isoxadifen may include:

1) Better weed control under drought conditions
2) Better activity on some annual weeds such as common lambsquarters
3) Better control of some perennials like dandelions and Canada thistle
4) Grass suppression depending on size of the grass
5) Improved crop safety with no concern about adjuvants or tank-mix partners

Products Compared

Although we've had limited experience with Status (the product with the safener), we've had considerable experience with Distinct over several years. In an effort to determine what, if any, advantage Distinct might have over Clarity, we summarized all experiments through 2006 where there were direct comparisons of the two products at labeled rates. These comparisons fell into four categories:

1) Clarity vs. Distinct postemergence (POST) following preemergence (PRE) Dual II Magnum applications
2) Clarity vs. Distinct in sulfonylurea tank mixes applied early POST
3) Clarity vs. Distinct in Lightning tank mixes applied early POST
4) Clarity vs. Distinct mid-POST for hedge bindweed control in corn

Annual Broadleaf Comparisons

When Clarity or Distinct was applied POST following PRE Dual II Magnum applications, there were no differences in velvetleaf (2 locations) or common ragweed (6 locations) control (Table 1). Distinct did however provide slightly better (99%) common lambsquarters (4 locations) control than Clarity (92%). When averaged over five locations there was no difference in grain corn yield between Clarity (133 Bu/A) and Distinct (130 Bu/A) following PRE Dual II Magnum applications.

Results in Table 2 show there were no differences between Clarity and Distinct for common ragweed (3 locations) or common lambsquarters (4 locations) control when these products were tank-mixed with sulfonylurea herbicides (Basis Gold, Steadfast, or Steadfast ATZ). Average grain yields were 131 and 142 Bu/A for Clarity and Distinct respectively when combined with sulfonylurea herbicides.

Table 1. Velvetleaf, common ragweed, and common lambsquarters control (%), and grain corn yields (Bu/A) when Clarity or Distinct was applied POST following PRE applications of Dual II Magnum.

		% Control			Yield
Herbicide	Rate Amt/A	Velvet (2)*	Ragweed (6)	Lambs (4)	Bu/A (5)
Clarity	8 fl oz	95 a**	91 a	92 b	133 a
Distinct***	4 oz	94 a	95 a	99 a	130 a

*Numbers in ( ) are the number of experiments contributing to these means.
**Means within columns followed by the same letter are not different.
***Applied with 0.25% (v/v) NIS and 1.25% (v/v) 28% UAN.

Table 2. Common ragweed and common lambsquarters control (%), and grain corn yields (Bu/A) when Clarity or Distinct was tank-mixed with sulfonylurea premixes and applied early POST.

		% Control		Yield
Herbicide	Rate Amt/A	Ragweed (3)*	Lambs (2)	Bu/A (4)
Clarity	4 fl oz	99 a**	87 a	131 a
Distinct***	2 oz	100 a	88 a	142 a

*Numbers in ( ) are the number of experiments contributing to these means.
**Means within columns followed by the same letter are not different.
***Applied with 0.25% (v/v) NIS and 1.25% (v/v) 28% UAN.

Tank mixes with Lightning resulted in an advantage for Distinct (96%) over Clarity (88%) for common ragweed (6 locations) control but no difference in lambsquarters (6 locations) control. Again, there was no significant difference in grain yield between Clarity (118 Bu/A) and Distinct (114 Bu/A) and when each was tank mixed with Lightning and applied early POST.

Hedge Bindweed Control

Clarity and Distinct were applied to hedge bindweed with 20-inch runners in 2004 and 2005 at Aurora NY. When hedge bindweed control was compared 1 year after treatment, 8 oz/A of Clarity or 4 oz/A of Distinct resulted in 88 and 89% bindweed control respectively (Table 3). Average grain corn yields were not different with Clarity (161 Bu/A) or Distinct (163 Bu/A) 1 year after treatment.

Summary

The results from the comparisons we've made in NY State suggest that Distinct or Status may not consistently provide better weed control than Clarity, and when summarized over experiments, there were no instances where grain corn yields were better with Distinct than with Clarity. In addition, Distinct and Status require the use of spray additives and are more costly than Clarity or Banvel. As a result, field corn producers may want to proceed with caution until additional research is completed with these new dicamba products.

Table 3. Mean hedge bindweed control (%) and grain corn yields (Bu/A) 1 year after treatment following mid-POST applications of Clarity or Distinct in 2004 and 2005 at Aurora, NY.

Herbicides	Rate Amt/A	Control (%)	Yield (Bu/A)
Clarity*	8 fl oz	88 a**	161 a
Distinct*	4 oz	89 a	163 a

*Applied with 0.25% (v/v) NIS and 2.5% (v/v) 28% UAN.
**Means within columns followed by the same letter are not different.

Calendar of Events

Jan. 7-10, 2008	Northeastern Weed Science Society Annual Meeting, Philadelphia, PA
Jan. 8-9, 2008	New York State Agribusiness Association Annual Meeting Auburn
Jan. 16, 2008	Western NY Corn Congress, Batavia
Jan. 17, 2008	Finger Lakes Corn Congress, Waterloo
Jan. 23, 2008	Madison County Crop Congress, Cazenovia
Feb. 4-7, 2008	Weed Science Society of America, Chicago, IL
Feb. 5, 2008	Corn Conference, Cooperstown
Feb. 6, 2008	Finger Lakes Soybean and Small Grains Congress, Waterloo
Feb. 7, 2008	Western NY Soybean and Small Grains Congress, Batavia
Feb. 13-14, 2008	Empire State Fruit and Vegetable Expo, Syracuse
Mar. 4, 2008	Corn Congress, Miner Institute, Chazy

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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