

What's Cropping Up?

A NEWSLETTER FOR NEW YORK FIELD CROPS & SOILS

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The Certified Crop Adviser (CCA) Program, a voluntary certification program for agricultural professionals, is an active program in 32 states nationwide. To become a member of the CCA program, an individual must have a minimum level of educational/crop advising experience (BS in agriculture with 2 years of crop advising experience or 4 years of crop advising experience), pass a national and state exam, sign a code of ethics, and participate in 40 hours of continuing education units every 2 years. Nationally, almost 8000 individuals have taken the national/state exams that were given in February '93, August, '93, February '94, and August '94. Another 5000 individuals are expected to take the national/state exams offered in February 1995.

The passing percentage for the four previous exams averaged 74, 72, 68, and 60%, respectively. Why has the passing percentage decreased with each subsequent exam? The exams are not becoming more difficult because the same pool of questions are recycled with only a 30% change for each exam. Likewise, the educational qualifications of the individuals who have taken the exams have not varied greatly from the average of about 35% high school graduates, 45% with B.S. degrees, 10% with A.A. degrees, and 10% with

Update on Certified Crop Adviser (CCA) Program

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advanced degrees. Rather, the primary reason for the decline in the passing percentage is probably because more individuals with narrower work experience (nutrient management specialists, pest management specialists, soil and water management specialists, etc.) are taking the exams that focus on an understanding of nutrient management, soil and water management, pest management, and crop management. For individuals who specialize in only one or two of these disciplines, we advise you to attend a training session to prepare for the exams.

In New York, 74 took the national exam in August of 1994, and 57 individuals or 77% passed. Fifty-five individuals or 74% passed the NY State exam. The national exam, which is a 200 question multiple-choice exam that emphasizes general management principles, will be given again in New York from 9 am until noon on February 3. The NY State exam, a 100 question multiple-

choice exam that emphasizes specific management practices in NY, will be given from 1 until 4 pm on the same date. Because we expect about 200 individuals to take the exams in NY, we will administer the exams at two sites this year. The exams will be given again at the NYS Grange in Cortland and also at the Ramada Inn at 1228 Western Avenue in Albany, NY. Exact directions on how to locate the exam sites will be given to the individuals who have signed up for the exam on the notification card from Madison, WI. If you have any questions concerning the exams or exam sites, please call Pam Kline at 607-255-2177. I do urge the exam takers to review the training materials that you received at the December 5-7 training session to help you prepare for the exams.

The CCA program, which emphasizes a comprehensive understanding of all aspects of crop production, coincides with the national and NYS emphasis on whole farm planning and environmental awareness. The CCA program requires us to reacquaint ourselves with all the crop management practices on the farm rather than just the management practices that pertain to our own discipline. The farmer, the agricultural professional, and U.S. agriculture should benefit from the CCA program.

PEST MANAGEMENT

Soybean Pest Management Highlights

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Soybean production is gaining popularity in NYS. For many producers soybeans fit well in their crop rotations, provide a useful home grown source of livestock feed, and offer a valuable cash crop option. As soybean acreage increases so have questions regarding crop protection.

While our experience with soybean pests is limited, field observations combined with reports from adjacent states and Ontario, Canada are encouraging. Relatively few insects and diseases have been reported to cause significant problems on soybeans in our area. Crop rotations also help break up the life cycles of many common corn and alfalfa insects and diseases.

What soybean pests might you expect and how can you avoid or minimize their damage? Some key soybean pest management considerations for New York producers follow.

Successful Soybean Pest Management Highlights:

- o Use of sound agronomic practices is critical for profitable soybean production. Choose a well adapted, disease resistant variety from a appropriate maturity group. Plant soybeans in a timely manner on a suitable planting site with proper field and seedbed preparation, fertility and soil pH to enhance production success. The use of clean, certified seed is highly recommended. If bin run seed is used have seed checked for germination, seed borne diseases, and presence of weed seed.
- o An effective weed management program will minimize early season competition and help protect potential yields. As with corn production, spring and fall weed surveys will help identify and assess troublesome weeds and improve information to tailor and time weed management programs. (See *What's Cropping Up?* vol. 4 number 2, 1994). In addition to standard pre- and post-emergence herbicide options, growers should consider banding herbicides in a 10" band over the top of soybean rows at planting and use of timely cultivation(s) to minimize weed pressure. Research studies involving soybeans in 30 inch rows have had very favorable yields with banding of herbicides over the row and timely cultivation's, compared to conventional herbicide or cultivation only weed control programs.
- o Insects seldom cause significant damage to soybeans in NY. Seedcorn maggot is occasionally a problem under cool conditions on fields with high organic matter content, such as manured fields. Planter box applications with a commercial seed treatment containing an insecticide is recommended. Use of seed treatments combined with high plant populations and soybeans' remarkable ability to compensate for some stand reduction will generally minimize stand losses from this pest. Japanese beetles are a more conspicuous visitor to soybean fields mid to late summer. Adult beetles feed on soybean leaves causing a skeletonized and brown appearance. While this damage may be very visible, damage is rarely economical. Indeterminate soybean types can tolerate up to 35% defoliation until bloom, about 20% while pods are small and soft, and about 35% when pods are hardening. Treatment for pest damage below the percentages listed are not recommended.
- o Two Spotted Spider Mites, non-insects, occasionally cause problems during hot dry years. Mites are minute, about 1/60th inch or less in length. Mites typically live in colonies producing a thin web on lower leaf surfaces. Mite injury causes a speckled appearance to leaves, which become yellow, curl, then brown, and plants die. Rain will reduce risk of mite problems.

o Disease survey information is limited, but suggests several diseases may pose potential risk to soybeans. White mold caused by *Sclerotinia sclerotiorum*, downy mildew, brown spot (*Septoria Leaf Spot*), pod and stem blight caused by *Phomopsis* spp, *Phytophthora* root rot, and soybean mosaic have all been reported in New York. Soybean cyst nematode, a major pest of soybeans in many other states and Ontario, Canada has NOT been detected in New York. Crop rotation, selection of disease resistant adapted varieties, and use of sound agronomic practices will help protect soybeans from disease problems. Three diseases bear particular mention: white mold, downy mildew, and pod & stem blight.

White mold may be a problem in soybeans planted directly after dry beans (or other *Phaseolus* spp), sunflower or canola fields where white mold has been a problem. Rotation to a non-susceptible crop such as corn, wheat or oats is recommended. White mold causes damage under cool moist conditions. Infection typically occurs at stem nodes, usually 4-20 inches above the soil line. Frequently a white cotton-like growth and small dark round to elongate shaped bodies can be

seen on or within the stem. Stems and pods infected with this fungus are pale brown and appear water soaked. Increasing row width to 30 inches and / or reducing plant density to reduce canopy relative humidity will help reduce risk of white mold. Resistant varieties may be on the horizon.

Downy mildew appears on the upper surface of young leaves as pale green to light yellow spots which enlarge into pale to bright yellow spots of indefinite size and shape. On the lower surface of leaves, particularly in moist weather lesions are covered with a grayish to purplish fungal mass. Severely infected leaves may curl, brown, and prematurely drop. Pod infections may occur without visible external symptoms. Crop rotation and plow down of infected residue are two management options.

Pod and stem blight reduces yield by spoiling seeds which have low test weights or may be lost at harvest. Diseased seeds may have lower viability, a poor appearance, produce lower quality oil or protein and may lead to a grade reduction and lower price. Plant infection may occur in the seedling stage from infected seed, or in larger plants from infested plant debris. Definite leaf or stem le-

sions are not produced under field conditions. Small black fungal bodies may be apparent often in a series of lines on dead stems, pods, or petioles of dropped leaves. Management of this disease is greatly enhanced by use of certified disease free seed, plow down of infected crop residue and crop rotation with corn or other non-host.

Soybean pest information will continue to improve as experience with this crop in New York increases. For the moment, pest problems appear to be relatively few and can be minimized with sound planning. Producers are encouraged to monitor soybean fields during the growing season to detect potential problems early, particularly during seedling emergence, pod fill stages, and periods of drought. Contact your local cooperative extension field person to discuss any unusual field problems you may observe.

New York Soybean Variety Trials

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Soil, Crop and Atmospheric Sciences

Soybean yields were exceptionally high in New York State during the 1994 growing season. The average yield exceeded 40 bu/acre eclipsing the previous state record of 38 bu/acre set in 1987. Although yields were exceptionally high in 1994, we think that soybean growers can further improve yields by selecting varieties that perform well under NY growing conditions. For example, Group I varieties tested at Aurora and Mt. Morris had an average yield range from 65 to 85 bu/acre. More importantly, a couple of varieties grown extensively in NY yielded in the 65 to 70 bu/acre range, whereas readily available varieties that do not occupy much acreage in NY yielded in the 80 to 85 bu/acre range. If NY growers are to be competitive with soybean producers from other regions, varieties that yield high under NY growing conditions must be selected.

Central and Western NY

Group II varieties yielded exceptionally well at Aurora and Mt. Morris in 1994 with average yields of 82 bu/acre compared to 74 bu/acre for Group I and 68 bu/acre for Group 00/0 varieties (data not shown). Likewise, when averaged across the last 3 growing seasons at Aurora and Mt. Morris, Group II varieties have yielded 67 bu/acre compared to 63 bu/acre for Group I and 59 bu/acre for Group 00/0 varieties (data not shown). Nevertheless, we continue to recommend that soybean

producers in central and western NY plant 60% of their acreage to Group I varieties because Group I compared to Group II varieties have less risk of maturity problems in cool years. We recommend that soybean producers plant 20% of their acreage to Group II varieties to take advantage of warm growing seasons or growing seasons that are dry in June/July but wet in August/September. Group II varieties, however, should be planted before May 25 on fields that do not receive early fall frosts. Soybean producers in central and western NY also should plant about 20% of their acreage to Group 00/0 varieties. Group 00/0 varieties, when planted in late May or early June, typically are ready for harvest in late September, which allows for planting of winter wheat in late September or early October. Group I varieties planted before May 25 are also usually ready for harvest in late September or early October, which again allows enough time for wheat planting in October.

Northrup King S 19-90 has produced the highest yields among Group I varieties at Aurora and Mt. Morris during the last 3 growing seasons (Table 1). Other high-yielding Group I varieties include CX 187 from DeKalb, Runner III from Terra, and Evasoy. Two new varieties that performed well in 1993 and 1994 are A1900 from Asgrow and H-1170 from Golden Harvest.

Terra TS 253 has produced the highest yields among Group II varieties at Aurora and Mt. Morris during the last 3 growing seasons (Table 1). Other high-yielding varieties include S 20-20 from Northrup King, CX 259 from DeKalb, A2835 from Asgrow, Sturdy from the Minnesota Crop Improvement Association, TS 205 from Terra, and 9273 from Pioneer. In 1993 and 1994, S 24-92 from Northrup King yielded the highest. Two other new varieties that yielded high in 1993 and 1994 are 7253 from Hoffman and A2242 from Asgrow.

Although there are several Group 00 and 0 varieties recently released, most of them have not been tested at Aurora and Mt. Morris. Consequently, we can only recommend Lambert, AC Bravor, and Maple Glen for central and western NY (Table 1). It is highly likely, however, that some of the new Group 00 and 0 varieties will yield as high or higher than these three varieties.

Northern New York

Group 00/0 varieties consistently perform best in Northern NY so we recommend that soybean producers in that region plant 80% of their acreage with these varieties. AC Bravor continues to be the highest yielding variety at Canton and Chazy (Table 2). Maple Glen is another variety that has performed consistently well, especially at Chazy. Although Lambert has yielded the highest in 1993 and 1994, its failure to

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mature and subsequent low yields in 1992 bring its 3-year average below AC Bravor and Maple Glen. Two new varieties from Prograin, PR206 and PR9102, produced high yields in 1993 and 1994.

Group I varieties should be planted in Northern NY before May 20 to avoid the risk of premature frost damage in the fall. OAC Dorado has performed consistently well during the last 3 years at Canton and Chazy. A new Group I variety from Golden Harvest, H-1170, produced high yields in 1993 and 1994.

Conclusion

Variety selection plays a key role in soybean management in NY. Varieties do differ significantly in yield potential under NY growing conditions. Each year we test varieties submitted by seed companies for our variety trials at Aurora, Mt. Morris, Canton, and Chazy. Although we do not test all available varieties nor do our four test sites represent all environments in NY, we think that the results from our variety trials can provide you with the best information on soybean varieties under NY growing conditions. If you grow soybeans in NY, please consult our annual soybean variety publication that is available at your local Cooperative Extension office about January 15 each year.

Table 1. Yields of early (Group 00/0), medium (Group I), and late (Group II) maturing soybean varieties at Aurora and Mt. Morris in 1992, 1993, and 1994.

Variety	AURORA			MT. MORRIS			Mean
	1992	1993	1994	1992	1993	1994	
-----bu/acre-----							
Early (Group 00/0)							
Lambert	61	50	66	41	70	75	61
AC Bravor	55	46	61	45	73	69	58
Maple Glen	55	41	55	51	62	75	57
Medium (Group I)							
NK S 19-90	67	49	83	66	85	87	73
DeKalb CX 187	63	52	77	63	78	84	70
Terra Runner III	65	48	73	63	87	79	69
Evasoy	65	44	74	59	82	84	68
Asgrow A1900	.	51	72	.	84	82	.
Golden Harvest H-1170	.	50	77	.	80	77	.
Late Group (Group II)							
Terra TS 253	65	65	82	48	84	85	72
NK S 20-20	55	65	76	54	85	82	70
DeKalb CX 259	59	68	84	42	69	94	69
Asgrow A2835	56	72	78	50	75	80	69
Sturdy	62	55	78	51	77	85	68
Terra TS 205	64	61	75	51	72	85	68
Pioneer 9273	55	70	84	48	70	81	68
NK S 24-92	.	69	82	.	84	96	.
Hoffman 7253	.	65	84	.	80	89	.
Asgrow A2242	.	65	85	.	78	78	.

Table 2. Yields of early (Group 00/0), medium (Group I) maturing soybean varieties at Canton and Chazy in 1992, 1993, and 1994.

Variety	CANTON			CHAZY			Mean
	1992	1993	1994	1992	1993	1994	
-----bu/acre-----							
Early (Group 00/0)							
AC Bravor	67	56	47	63	72	64	62
Maple Glen	62	47	47	60	60	60	56
Lambert	49	59	52	45	60	61	54
Prograin PR 206	.	52	52	.	62	67	.
Prograin PR 9102	.	52	53	.	61	63	.
Medium (Group I)							
OAC Dorado	59	59	51	51	59	62	57
Haroson	48	57	52	47	57	58	53
Parker	52	57	55	38	57	58	53
Golden Harvest H 1170	.	57	56	.	59	59	.

Calendar of Events

Jan. 30-Feb. 2	Weed Science Society of America National Meeting, Seattle, WA
February 3	National and NY State CCA Exam - NYS Grange, Cortland or Ramada Inn, Albany, NY
February 14	Satellite Teleconference: Watershed Hydrology. Contact D. Grantham 607-255-4931
February 16	Cultivation Conference, Syracuse Sheraton Inn and Convention Center
Feb. 22-23	Farming for the Future: Partners in Stewardship, Syracuse University Inn
Feb. 27-28	National Alfalfa Symposium, Sheraton Inn, Liverpool, NY.

What's Cropping Up? is a bimonthly newsletter distributed by the Department of Soil, Crop and Atmospheric Sciences 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: Soil, Crop and Atmospheric Sciences, Plant Breeding, Plant Pathology, and Entomology. **To subscribe, send a check for \$8.00 along with the form at the right.**

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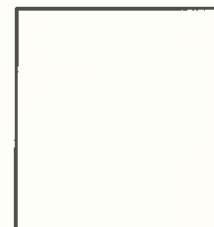
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