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CHESAPEAKE FARMLINE

June 18, 2008

2008 CORN CROP OFF TO A DIFFICULT START

Several factors have hindered this year's corn crop thus far. A wet April causing delayed plantings followed by a cold early May made spot plantings or replanting necessary in many fields. The transition from wet to cold to hot then dry has made stands weak and uneven. These environmental factors have caused corn to perform poorly, even where farmers had good practices in place.

In some fields, corn appeared yellow and stunted early on. A review of fertilization practices shows those fields received appropriate fertilizer, but "other" factors contributed to weak areas. Some of those factors which added to poor performance included:

Reduced tillage: The high cost of fuel and equipment has led to more reduced tillage which increased the bad effects of cold wet soils. This progression to cost saving practices should not discourage farmers from staying the course. With the cost of fuel, equipment, lack of skilled labor to operate equipment, this trend will not likely be abandoned.

Cold wet soils: Seed could not overcome the wet soil and 41 degrees we experienced some mornings in early May. Those areas that survived became stunted and discolored. It was not a matter of early planting, but a case of unseasonable weather.

Hot temperatures and dry soil: Early June saw unseasonably hot temperatures which caused corn to roll. The hot temperatures were even more difficult on young corn seedlings which had very little root system to sustain itself as soil moisture became scarce.

Seedling vigor: In my corn variety plot, there is a lot of visual evidence of differences in seedling vigor because of the environmental stresses. I have rated those varieties and you can see evidence of the difference as you pass by the plot. The variety plot is located on Ballahack Road across the road from Bennie Jennings's farm. You can note the differences in varieties planted side-by-side under identical conditions.



Sulfur deficiency: A noted deficiency occurring in corn this year in North Carolina and Virginia is sulfur. According to N. C. Cooperative Extension, 72% of corn tissues tested in the N. C. Plant Tissue Lab this year have low to deficient sulfur in the plant tissue. Other corn samples received at that lab listing “yellowing” as a symptom show a very high N:S ratio, suggesting sulfur is limited relative to the amount of nitrogen in plant tissue.



Photo: Glenn Rountree

Sulfur deficiency has often been associated with sandy soil. However we are seeing evidence of sulfur problems on mineral-organic and even heavy muck or organic soils. Sulfur problems can be attributed to many reasons.

- Adverse weather can limit root systems preventing absorption of available sulfur.
- Frequent and intense rainfall can leach sulfur out of the root zone to where young plants cannot reach.
- More reduced tillage can slow soil warm up causing delayed root development.
- Low soil pH enhances deficiency symptoms, as with other nutrients.
- The Clean Air Act has reduced sulfur emissions which in the past were returned to the soil by rainfall. There may be a need to look at adding more sulfur fertilizer as these air emissions are reduced.

What to do when the problem is prevalent over most of a field:

In both cases, #1 where sulfur is deficient in soil or #2 just deeper in soil profile where roots cannot reach, you should apply additional sulfur to correct the symptoms. The main question is: How much do I apply?

- 1.) If the grower **has** applied some sulfur at planting or sulfur index levels from a recent soil test are Medium or higher, 10 lbs. of elemental sulfur should be adequate. This application is intended to stimulate root growth and get the crop past this critical period.
 - * 24-0-0-S (3%) Side-dress Nitrogen has a 8:1 ratio of N:S. This means applying 80 lbs. of this side-dress N rate would apply 10 lbs. S. This would save a trip over the field and put additional S near the root zone.
- 2.) If the grower **has not** applied sulfur at planting or sulfur index levels from a recent soil test are Low, 20 to 25 lbs. elemental sulfur should be applied.
 - * 0-0-22 (23% S, 11% Mg); 0-0-50 (18% S); calcium sulfate (17% S); or ammonium sulfate mixed with thiosulfate. The 0-0-22 is probably the best source because it also supplies magnesium which may leach on sandy soils.

Long-Term Solutions:

- Soil test frequently and fertilize accordingly to achieve medium or higher sulfur index levels.
- Lime to keep pH levels above 6.0 to insure critical nutrients can be taken up.
- Reduced tillage, early plantings, or extremely sandy textured soils should add sulfur in pop-up fertilizer in a 2" X 2" band or apply some sulfur preplant.
- Anticipate sulfur leaching by observing heavy rain events just prior to planting season and act accordingly.

Will this deficiency affect corn?

If sulfur deficiency is mild and corrected before growing point differentiation (21 to 30 days after emergence) by either roots growing into higher sulfur concentrations in soil or sulfur application, there will be little or no effect on yield. If deficiency is moderate to severe and lasts beyond 21 days after emergence, there could be significant effects on yield. Generally you can lose 1-2 bushels per acre/day past the 21 day window after emergence. It is important to correct deficiencies before heavy losses are incurred. The good news is plants respond quickly to sulfur applications.

2008 CHESAPEAKE WHEAT VARIETY COMPARISON

Cooperator: **Producer:** Marvel Nicholas and G. C. Nicholas, Jr.
Extension: Watson Lawrence - VCE - Chesapeake
Date Planted: November 7, 2007
Previous Crop: Corn
Tillage: Disk + Disk & Culti-packer
Soil Type: Chesapeake fine sandy loam
Fertilization: October, (400) lbs. 5-15-20 pre-plant
March 14, (100) lbs. Nitrogen (30%)
Crop Protection: December 10, (4.75 oz. Osprey + 2-qts./100 gal. nonionic surfactant +
2 qts. 30% N) per Acre
March 14, 1/2 oz. Harmony Extra with liquid Nitrogen
Date Harvested: June 10, 2008

<u>VARIETY</u>	<u>*SEED TREATMENT</u>	<u>(%) MOISTURE</u>	<u>(lbs.) TEST WT.</u>	<u>(bu./A) YIELD</u>
Sisson	RT	12.1	56	94.0
SS MPV57	RTS	11.9	59	93.6
Tribute	U	12.6	58	91.2
Featherstone 176	RT	11.9	62	84.7
Progeny 185	U	12.0	61	84.2
Dominion	DX	11.8	61	84.0
SS 560	RTS	11.8	58	82.9
McCormick	U	12.3	62	80.7
Vigero 9412	DX	12.0	57	80.2
Jamestown	RTS	12.0	65	79.2
Vigero 9713	DX	12.8	60	78.6

*Seed Treatment Code:

DX: Dividend Extreme

RT: Raxil/Thiram

U: Untreated

RTS: Raxil/Thiram + Storcide II

Discussion: 2008 was a good year for wheat production. Yields and test weights were good. #2 Soft Red Winter Wheat standards are 58 lbs. or more for no discount. There were few insect pest problems. Cereal leaf beetles were not a significant pest this year. There were heavy aphid populations this spring and fortunately, little Barley Yellow Dwarf Virus (BYDV) present in those populations. This disease when present is spread by aphids. There was some powdery mildew observed in March on susceptible varieties, as well as some head scab. This year there were relatively few other disease problems. Standability was excellent.

CONDITIONING OF WHEAT SEED



Those farmers interested in saving wheat seed for fall planting may be interested in having that seed conditioned for summer storage. One challenge to saving wheat seed is preventing insect damage. Seed that is conditioned can prevent insect damage by application of an insecticide. The following are in the business of conditioning wheat seed:

- Chesapeake Grain, Inc.-Bainbridge Blvd. (543-2041)
- Wesley Moore-634 Pitts Chappell Road-Weeksville, N. C. (252) 338-2411

You can determine seed germination by having it tested at the VDACS Seed Testing Laboratory. Forms are available from our office. Or you can do a test yourself by placing a number of seeds on a moist paper towel, placing it in a zip-lock bag on top of your water-heater for a week. This can give you a good indication of the germination percentage.

Farmers are allowed to plant back their own acreage with seed protected by the Federal Plant Variety Protection Act (PVPA). But the PVPA does prevent a farmer from selling protected seed.

A separate rule applies to seed that is patented by a private company. Currently Pioneer does patent several of its wheat varieties. Pioneer reserves the right to prohibit a farmer from replanting its seed which has a patent. This is enforceable by Pioneer exclusively and you should check to see if that seed has a patent before saving seed.

DATES TO REMEMBER: (contact our office for more information 382-6348)

June 14 Chesapeake Farmers Market Opens-City Park
July 22 Ag In The Classroom Teacher Training-Greenbrier Elementary School
August 14 Virginia Ag Expo-Billy Bain Farm-Dinwiddie County
August 19 Wheat Pre-season Breakfast Meeting-Hickory Ruritan Building
Sept. 19 Farm Days School Tours-City Park

If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Chesapeake Extension event, please discuss your accommodation needs with the Extension staff at (757) 382-6348 at least one week prior to the event.

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by Cooperative Extension is implied. If you need additional information, please give us a call.

Sincerely,

A handwritten signature in cursive script that reads "M. Watson Lawrence, Jr.".

M. Watson Lawrence, Jr.
Extension Agent, Agriculture