

2013 Corn & Soybean Day Follow Up

The 2013 Northwest Ohio OSU Extension Corn & Soybean Day was held on Thursday, January 24th at Founders Hall in Archbold, Ohio. The event had record setting attendance of 255 farmers, sponsors, exhibitors and speakers. The day included comprehensive crop production, soil fertility, pest treatment and nutrient management presentations from respected Extension Specialists. The overall objective of the day was to improve crop production in Northwest Ohio while remaining cost effective, agronomically sound and environmentally friendly. In addition to the speakers, attendees had the chance to earn private or commercial pesticide applicator recertification credits and Certified Crop Advisor CEUs. Twenty-nine sponsor exhibitors--ranging from financial services, precision agriculture consultants, crop inputs (seed, fertilizer, crop protection), grain marketing and agricultural agencies--were on hand to talk with attendees and discuss products. Summarized below are the key points identified by the four keynote speakers.

Corn Production After a Drought Year – Dr. Emerson Nafziger, University of Illinois Extension

With Iowa and Illinois still dry from the 2012 drought and relatively high corn prices, local farmers are considering raising more corn this year. University of Illinois Corn Specialist Dr. Emerson Nafziger says that corn following drought corn usually produces a good crop. Dr. Nafziger remarks at the Fulton County OSU Extension Corn & Soybean Day are summarized in the next three paragraphs. With some possible carryover nitrogen, less corn residue, and possibly a little more water storage; corn after drought stressed corn picks up some advantages. In 2012, the corn got off to an excellent start with a warm dry spring, fast growth, excellent stands, and low disease pressure. However, the weather during pollination was critical and hot weather followed by low moisture hurt corn growth (especially the roots) and reduced corn pollination (Nafziger, 2013).

In general, corn following soybeans produced slightly higher yields than corn after corn. No-Till corn generally produced better than conventional tilled corn, possibly due to more water storage and deeper root penetration. Soil compaction, poor soil structure, and side wall compaction hurt corn yields in 2012 and led to some instances of “floppy corn” with inadequate root development and lodging (Nafziger 2013).

Some advertised “drought” resistant corn varieties do better but the gains are generally marginal at 5 to 6 bushels per acre. Most corn has built in traits for producing higher yields, even under drought conditions. Yields tend to maximize at a corn population of 35,000 seeds per acre and extra nitrogen did not increase corn yields. Most corn now needs about .75 pounds of nitrogen per bushel compared to 1-1.2 pounds of nitrogen per bushel required a decade ago (Nafziger, 2013).

Weed Disasters: Top Ten Ways to Avoid Being a Statistic – Harold Watters, OSU Extension

Based on weed surveys taken by OSU Extension personnel around the state and here in Fulton County, 2012 had consistent weed escape problems with marestail, lambsquarter and ragweed. Harold Watters, OSU Extension Field Specialist, Agronomic Systems, first discussed the history of weed resistance in

Ohio. He then gave a list of ten useful production practices to give crops a competitive edge over weeds:

- Use narrow row spacings (15 inches or less) for soybeans.
- Plant on the proper date and at the correct seeding rate for all crops.
- Use insect, disease, and nematode-resistant varieties.
- Control insects and disease.
- Utilize an adequate soil fertility plan.
- Provide adequate drainage.
- Control weeds in all non-cropland areas like fencerows, ditchbanks and rights-of-way.
- Plant high quality, weed free seed.
- Do not spread manure, hay or crop residues contaminated with weed seeds onto cropland.
- Clean farm machinery between fields to avoid transport of weed seed, rhizomes, tubers and rootstocks.

Furthermore, unfamiliar weeds should be identified and controlled quickly. Crop rotation and herbicide and, more specifically, herbicide mode of action should be rotated each year. (Watters, 2013)

It was further discussed that weed control under extremely dry conditions can be attributed to several factors. First, dry weather residual herbicides do not get activated and the crop is slow to develop and shade out weeds. In general, most weeds are more tolerant to post-emergent herbicides. Weeds may not emerge until late summer rains, making it difficult to know when to spray a post herbicide. (Watters, 2013)

For effective control on marestail, Watters suggested making sure the field was weed free at planting by use of a comprehensive burndown mixture (multiple chemistries) and/or thorough tillage immediately before planting. Follow up the burndown with a residual marestail program that will last 6 to 8 weeks. See a list of approved products in the 2013 OSU Weed Control Guide. Multiple preplant applications prove more effective than a single spring application. For example, a fall burndown with spring burndown and residual or two split spring applications with one coming in late March and the second close to planting. Again consult the Weed Control Guide for suggested herbicides. (Watters, 2013)

Soybean Health – Disease Update – Dr. Anne Dorrance, OARDC & OSU Extension

After lunch, Dr. Anne Dorrance addressed the most important diseases to be aware of in soybean production in Northwest Ohio. She indicated that 2012 had not been a tremendously difficult year from a disease perspective as the hot, dry weather was not conducive to them developing. In fact, it was difficult for her Soybean Pathology Lab at the Ohio Agriculture Research and Development Center to acquire significant samples in 2012 because of the drought. She put out a request for soybean disease samples to the farmers in Northwest Ohio so she can continue effective disease assessment in 2013.

The first soybean disease she discussed was the foliar disease Frogeye Leafspot (*C. sojina*). It can overwinter in snowcovered fields and affects soybeans of highly susceptible germplasm. These affects can be overcome by an application of Quilt Excel or Headline. (Dorrance, 2013)

Phytophthora root rot continues to be a problem in soybean production but is influenced heavily by variety selection and the rainfall received and at what stages of growth. Last year was not a significant year as drought has negative effects on the disease. It is critical for producers to continue to look for the disease and pay attention to the sensitivity displayed by key fungicides. Finally, applications for this disease continue to rise and the economic threshold for application is a moving target (Dorrance, 2013).

She then discussed the ever present soybean cyst nematode in Western Ohio soybean fields including Fulton County. In recent years the number of SCN eggs have increased from 500 to 2,500 to 40,000 SCN eggs/ 100 cc soil sample, with the worst numbers coming in fields without crop rotation (soybeans back to soybeans). Even in some cases, soybean-corn-soybeans rotations are experiencing higher numbers of cysts. Crop rotation of soybeans-wheat-corn-soybeans will decrease cyst populations. Above all, producers should treat seeds planted in SCN susceptible fields with products like Avicta Complete, Poncho VoTiVO or ApronMaxx (Dorrance, 2013).

Finally, Dr. Dorrance discussed some less frequent, but still important diseases to consider including *Fusarium graminearum*, *Rhizoctonia solani*, and *Phomopsis* in seedpods (concern for foodgrade and seedstock).

Soil Factors for High Yields

The final speaker for the day was Greg LaBarge who discussed Soy Factors for High Yields. The first factor discussed was precipitation and soil water. Greg indicated the need for corn to have 3,000 gallons of water per bushel. After translating that into inches of water needed per year, Greg revealed that 200 bushel corn needs 22 inches/year and 300 bushel corn needs 33 inches/year. In short, higher yields requiring a higher water demand. He then showed over a century's worth of climate data that proved a slight precipitation increase in every season except winter over the last century and that fact that each season is experiencing a slight warming trend. Humidity has an impact on these trends. Greg explained that soil type and the amount of organic matter influence how much water is available to plants (between field capacity and wilting point). Clays and higher organic matter soils can hold more water than sands or lower organic matter. (LaBarge, 2013)

Greg suggested several ways to build soil structure. The producer should maintain a good fertility program at 6.0-6.8 pH. Reduced tillage or no-tillage should be considered over conventional tillage practices and cover crops, manure or other organic additions should be added to soil to improve structure. Specifically, cover crops are easier to work into the rotation after a wheat crop. (LaBarge, 2013)

Greg concluded his presentation with some information on gypsum. Gypsum is a good source of Calcium and Sulfur without changing the soil pH. It works well in the reclamation of sodic/serpentine

soils and may help with soil crusting. He does however caution the yield response to gypsum and suggests evaluating the cost:benefit in your operation (LaBarge, 2013).

Overall, higher yield requires higher water demand. Attention to soil structure, water holding capacity and organic matter (carbon) is more critical than ever. Agronomic management practices are equal to genetics in moving yields higher. (LaBarge, 2013)