

Williamsburg, Blair County, PA, Summer Cover Crop & Soil Health Workshop

Pictures: Dave Wilson, Research Agronomist, King's Agriseeds Inc.



Mill Hill Farm Supply, King's Agriseeds Inc., The PA No-Till Alliance, Blair County Conservation District, USDA-NRCS, PADEP's Chesapeake Bay Program and Penn State Extension conducted a collaborative comprehensive two day "**Summer Cover Crop & Soil Health Workshop**" at Jim Biddle's Mill Hill Farm location and the Williamsburg Farm Show Building this past Thursday evening and Friday, June 19th and 20th



Picture: Beth Futrick, Blair county conservation district passes out field plot maps as farmer attendees gather to view the Soybean Seed Treatment trial at Mill Hill Farm.



Thursday evening attendees viewed the Penn States' 2014 Soybean treatment plots on-farm field trial where a Pioneer 93Y84 Group 3.4 Soybeans were planted with and without the Pioneer premium seed treatment.



Picture: Jim Biddle, Mill Hill Farm, explains the setup and planting of the soybean seed treatment trial.



The Soybeans with and without seed treatment were planted on May 23, 2014 in randomized replicated 30 foot wide strips across the field , each strip two passes with the six row planter in 30-inch rows. The treated seed dropped at 140,000 seeds per acre while the untreated seeds dropped at 142,000 seeds per acre. Jim Biddle commented that the untreated seeds were “smoother” and therefore more “slippery” and they were getting some “double drops” with the untreated seeds while planting.

When Penn State’s extension educator Elina Snyder conducted soybean stand counts on June 9th, there were 115,000 plants per acre with the treated seed and 121,000 plants per acre with the untreated seeds. These early counts show us the seed treatment impact on seeding rate population through a planter and subsequent stand as a comparison.

John Tooker, Penn State Entomologist, spoke about the three major pests on Soybeans the Soy Bean Aphid, The Brown marmorated stink bug and the Bean leaf beetle. John commented that “the only way you lose yield from Soybean aphid damage is if the plant is highly decimated. And also that “the Aphids usually arrive the first week in July”

Seed treatments with a systemic insecticide can protect young and/or late-planted soybeans; such as “double-cropped” soybeans. But for most regular plantings in Pennsylvania the seed treatment protection typically doesn’t persist later into the soybean reproductive stages when aphid populations typically peak.

The Soybean plants that we viewed in Jim’s field looked very healthy, with only a few plants scattered about with some bean leaf beetle damage. John pointed some of this out-pictures below.

The bean leaf beetle typically has two generations per year in Pennsylvania. The first generation adult beetle population which emerge from the soil in late June or early July will typically peak in the late vegetative stage or early reproductive stage of the soybean plant growth. The early feeding by first generation beetles on soybean leaves usually doesn’t result in economic yield losses. It will usually be the second generation of

bean leaf beetles feeding on the soybean pods in the late summer that will cause losses in our soybean yields.

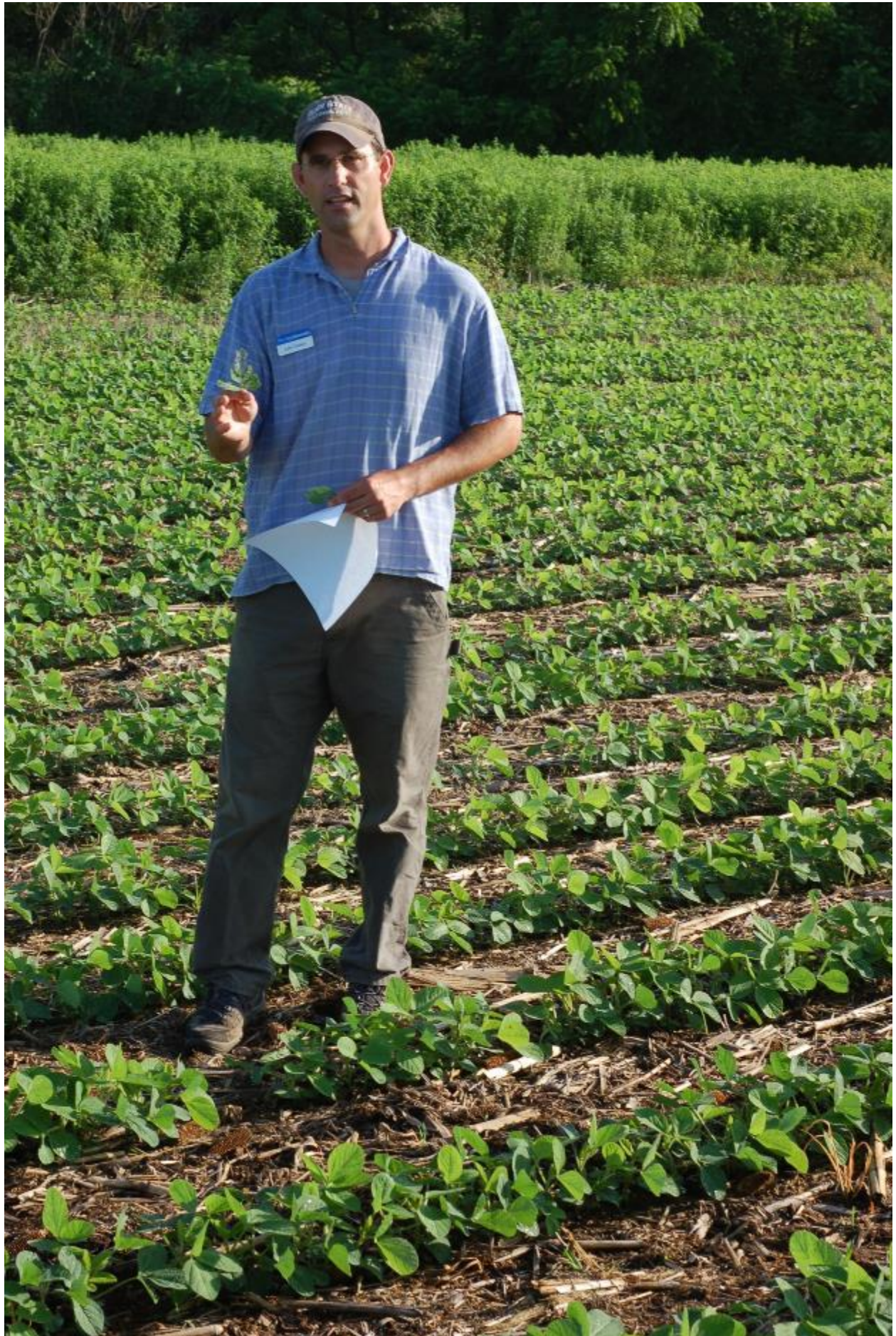
Pictures: John Tooker, PSU Entomologist speaks about seed treatments and Insect pests on Soybeans.

Soybean Leaf pictures: Showing typical Bean Leaf Beetle feeding damage on Soybean leaves from first generation of bean leaf beetles.













Picture: John Tooker, PSU entomologist speaks to the crowd of farmers.



Picture: Farmers walk and view the soybean seed treatment trial.



Picture: Jim Biddle, Mill hill Farm speaks about the summer annuals planted in strips.



Tim Fritz, King's Agriseeds owner recommended that Jim plant the two Sudangrass hybrids –(**AS 9301** and a new release **AS 9302**) side by side so they can be looked at in this Blair county field environment and compared.

David Hunsberger, Regional coordinator for King's Agriseeds spoke about AS 9301 and AS 9302. AS 9301 is a medium maturity thin stemmed BMR 6 hybrid Sudangrass. This hybrid has shown quick regrowth after harvest and since it is a “dry-stalk” type hybrid it has fast dry down after harvest and can be made into dry hay. AS 9302 is a newer Brachytic dwarf version of AS 9301, The brachytic dwarf version has the leaves growing closer to each other up the stem with shorter inter-node distance compared to the AS 9301. This gives the AS 9301 excellent standability and utilization for rotational grazing and tolerates shorter cuttings. AS 9302 is also a dry-stalk type of sudangrass hybrid so it can be utilized to make dry hay.

AS 9301 Sudangrass



AS 9301 Sudangrass



AS 9301 Sudangrass- close up



AS 9302 Brachytic Dwarf Sudangrass (New release)



AS 9302 Brachytic Dwarf Sudangrass- close up



In addition to the two Sudangrasses, Tim Fritz also recommended that Jim compare two millets side by side in the field, Jim planted both the “**Exceed BMR Hybrid Pearl Millet**” and “**Wonderleaf Pearl Millet**”. The Exceed has the dwarf gene which improves the stem to leaf ratio, gives it better standability and better adaptability for grazing. This Exceed hybrid has the BMR- Brown Mid Rib trait which gives it enhanced quality and digestibility. The “Wonderleaf Pearl Millet does not have the BMR gene, and is not a dwarf.

The millets adapt better compared to the Sudangrasses to lower pH soil conditions and also to wetter and somewhat cooler environmental conditions.

Picture below: Wonderleaf Millet No-till drilled.



Picture: Wonderleaf Millet, Close up



Picture: Exceed Millet on the left, Wonderleaf Millet on the right.





Picture: Jim Biddle, Mill Hill Ag talks to farmers about the details of no-till practices, rotations and cover crop use on his farm.



Pictures: Thursday Afternoon Penn State Ag Extension Educator Elina Snyder talks to farmers about the Soybean Seed Treatment trial.



Pictures: Thursday Afternoon Penn State Ag Extension Educator Elina Snyder digs out Soybeans plants to show nodules on the roots.





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Picture: Jim Biddle and Farmers examine Soybean nodules





Cover Crop Mixes and Nutrient Cycling: Penn States Charlie White gave a presentation concerning cover crops and nutrient cycling. Charlie compared and contrasted various cover crop mixes, how they vary in their nutrient cycling capabilities, their Carbon to Nitrogen ratios and subsequent release of nutrients back to the following crop in rotation. Charlie presented various on-farm research results from no-till applications to farmers in the presentation; which contributed to the bigger picture of understanding how to make cover crop mixes work in rotation and how they can be an integral part of a nutrient cycling and nutrient management program.

Crop Residues & No-till Planting

During the two day field day, no-till planting into crop residues was addressed in presentations and in the field. Dave Wilson, Research Agronomist from the King's Agriseeds team gave a morning presentation concerning some of the challenges of planting into crop residues. Dave reviewed and covered the details of cutting through plant residues, row cleaning, depth control, seed-to-soil-contact and various types of closing wheels to better close the seed trench.

Picture: Field days attendees viewed successful no-till planting of soybeans into heavy crop residues.





Picture: Jim Biddle explains the features of the no-till planter that he uses on the farm.



Pictures: Jim shows the disk opener and floating row cleaner utilized to move residues aside out of the seed trench zone.





During the presentations, emphasis was placed on being able to use row cleaners to clear the seed trench zone, having enough ballast for coulters to cut through residues effectively into the soil, the importance of seed to soil contact and effective row closing devices, to make sure the seed trench is closed properly.

Picture: Jim Biddle shows the dual “spider closing wheels” on his no-till planter.



Picture: PA –No-till Alliance Board Member - Byron Hawthorne from Hawthorne farms, views the spider closing wheels on the no-till planter.



Picture: Jim Biddle shows the dual “spider closing wheels” on his no-till planter.





Picture: Close-up of Spider closing wheels.



The InterSeeder

Dave Wilson, research agronomist from King's Agriseeds and Chris Houser Penn State Education Educator presented information about the Interseeder. Dave has been collaborating with the PSU group since 2011 with the interseeder project, and King's Agriseeds has been supporting the on-farm research for the project supplying cover crop seeds for research and on-farm demos at multiple locations.

On Thursday afternoon Penn State Extension Educator Chris Houser came and demonstrated the Penn State Interseeder, No-tilling "Broadcaster" which is a cover crop mix that Wilson put together and is available from King's Agriseeds. This was no-till drilled with the interseeder into both corn and soybean strips on the farm for the demo. The Corn is Master Choice MCT 6583 with a relative maturity of 115 days, and was at V5-V6 stage when drilled into with the interseeder.





Pictures: Close up of the interseeder No-till Coulters and disk openers for drilling cover crop seeds.







Picture: Close up of press wheels







Picture: Height of Masters Choice MCT 6583 corn that was drilled into with the interseeder.



Picture: Chris Houser, PSU Extension explains details of the interseeder project





Picture: Elina Snyder, PSU Extension with Inter Seeder.



Picture: Chris Houser interseeding King's Agriseeds "Broadcaster" cover crop mix into the corn.









Picture: Elina Snyder PSU, discusses interseeding pass with farmers.





Pictures: Return Pass of InterSeeder in No-till corn Masters Choice MCT 6583









