

Field Day Attracts Farmers

(Continued from Page A1)

Experts in their field spoke next to fields specifically plotted, planted, and prepared for Field Day observations and demonstrations. District manager for the Juniata Conservation District, Ann Harshberger, kept the program moving under gray skies while the speakers packed as much workable information as possible into their talks, allowing time for questions.

By 1:30 p.m., drizzle set in, but most field tours at Wilbur and Doug Brubaker's Double "B" Grain Farm were completed, and the three touring hay wagons headed back to Brubaker's machine shed to finish up.

Field Day sponsors Wilbur and Doug Brubaker, The Juniata County Conservation District, The Juniata Valley Crop Management Association, The Pennsylvania Forage and Grassland Council, The Pennsylvania State Cooperative Extension Service, and the USDA Soil Conservation Service hope to improve upstream soil conservation efforts that will reduce soil loss and eventually help restore the Chesapeake Bay.

Residue Management

Joel Myers, state agronomist for the Soil Conservation Service, urged farmers to look at crop residue as a sod — a soil cover to prevent erosion.

At one site, Myers offered two methods for measuring residue — visual observation by looking straight down rather than across a field to compare the ground you see per residue you see, and by line transect method.

Later on, Myers referred to a green handout with these considerations:

- Residue levels using no-till in the entire rotation will build up, providing a more uniform level of residue throughout the season and from year to year. This layer will protect the soil to prevent erosion during intense rainfall.

- Continuous soil cover will reduce potential for extreme erosion during high intensity rainfall periods and more closely align to meet Pennsylvania Clean Streams Law.

- Farming higher levels of residue will provide the operator with more cropping options, may also reduce the need for some additional conservation practices, and should reduce labor and expenses by reducing the number of practices which are carried out with tillage equipment.

- Tips on maximizing crop residue levels after planting include even distribution of residues after harvest and to till only when needed to solve a real problem, such as shallowing up tillage operations unless compaction is a serious problem.

Tilling 3-6 inches deep will reduce fuel costs, wear and tear on equipment, may reduce stone picking, and will increase the amount of surface residues.

Another tip was to select the proper tillage equipment/attachments and the sequence of tillage operations. Use primary tillage equipment only for primary tillage operations.

Some field cultivators may be used as the only tillage operation performed where residue amounts are already low and the soil is not too hard. Disks cause compaction and also bury residue. Use only on lighter textured soils in a situation where a field cultivator can be used to follow the disk.

Equip field cultivators and chisels with sweeps or straight teeth. No-till planters and drills not only are essential for no-till planting, but they can reduce the need for extensive seedbed preparation by leveling the preparing the seedbed for each row that is planted in mulch and conventional planting operations.

The first step in determining surface residue after planting is to know how much residue is produced by the crop in question (based on crop yield) at the time of harvest.

Carry out actual measurement of residue under different conditions to learn how to achieve the desired levels of residue to meet your plan requirements.

Charts for calculating tillage effects on residue levels are only guidelines. Actual measurements will provide better information under individual farm conditions.

Plan ahead to supplement crop residues with cover crops as needed when residues are removed or crops are grown that do not produce adequate levels of residue or during adverse growing conditions such as drought. Cover crops may be harvested in the spring to provide livestock feed.

Compaction

Lynn Hoffman, senior research associate and manager of Rocksprings Research Farm, wants farmers to think in terms of conservation tillage, leading to no-till to relieve soil compaction, which then produces better crops.

"If it doesn't affect corn growth, why are we worrying about it?" Hoffman said.

Symptoms of compaction include:

- Patterns of poor crop growth in fields as opposed to entire fields, usually due to machinery traffic patterns.

- Crop stunting.

- Fertilizer deficiency symptoms in fields where roots cannot get to available fertilizer.

- Crop stress.

According to Hoffman, compaction is caused by:

- Heavy axle loads - manure spreaders, fertilizer, and lime spreaders.

- Wet soils. The price paid for working wet soils is compaction. "The big reason for seeing more compaction nowadays is we're using bigger tractors with a cab that keeps you nice and warm and dry, and years ago, you'd have figured something else to do that day when it was too miserable to be out there. We tend to be out there anyway. We've taken the moldboard plow out of the program and chisel that doesn't show the sin of working wet soil as obviously as a moldboard plow."

- Excessive traffic. 75 percent of compaction occurs the first time out on a field in the spring. Further field traffic increases the problem.

- Tillage equipment. A disk pan at 4-5 inches from an offset disk can cause enough compaction that, under stress conditions, the roots have a tough time getting through.

Avoid compaction by:

- Reducing axle weights. Hoffman urges farmers to put tandems on equipment, not duals. Duals can be used for traction, but do not reduce compaction. They spread it over a greater area.

- Reduce number of trips across fields.

- Reduce amount of tillage.

- Wider tires do not reduce



John Baylor, agronomy, professor emeritus, believes fall alfalfa management is important to healthier plant growth in the spring.

compaction. They reduce depth and spread it out.

- Timing. Stay off wet fields. "A lot easier said than done," Hoffman said. "Especially in spring, or worse, in the fall if it needs to be combined in a wet field. Anything we can do to stay off the wet fields will help, especially if you're going to no-till."

To correct compaction, Hoffman urges farmers to first identify the problem, then decide what to do about it.

Hoffman used a 1/2-inch iron rod with a handle to determine the depth of soil compaction. "I'm finding a tight spot in the soil at about that depth," Hoffman said, referring to a 6-inch mark.

Hoffman explained that farmers do not need sophisticated equipment to correct compaction. "Pay close attention to what your crops are telling you and find the reasons for the distress," he said.

Alfalfa Management

John Baylor, professor emeritus, agronomy at Penn State, described alfalfa as a deep taprooted perennial plant whose fall management is essential to total seasonal management.

"If we have a multiple pest resistant variety, if we maintain a good fertility program, and if we



Lynn Hoffman, senior research associate and manager of Rocksprings Research Farm, told farmers that we tend to work soils wetter than our forefathers did and that we pay for it with compaction, which affects plant growth.

have carried out a reasonably good cutting schedule (about 35 days) during the growing season, we have more flexibility with how we manage that crop in the fall as far as taking it into winter in good shape," he said. "But we're still better off if we could maintain 4-6 weeks before freeze-up to give that plant a chance to build up reserves before it goes into the winter."

Baylor added that not many varieties are resistant to leaf diseases. While leaf diseases do not affect the life of the plant, they do affect quality by causing excessive leaf drop.

Nitrogen Quick Test

Crop Management Association technician Greg Hostetter said the importance of a nitrogen quick test is to identify the level of nitrogen in the soil at a time when you might be considering a sidedress, when corn is about 12 inches high.

Crop Management Association member Art Zug offered his observations in relation to his 380 crop-acre farm.

"We use a lot of manure in our situation and don't know the value of the manure until we test for it," he said. "We do have an injection system. In previous years, we have used it to incorporate the nitrogen between the corn rows. It is a very economical system and, as Greg said, you use it if you have to, and if you don't, you don't. It's also an environmental safeguard."

Later in the program, Hostetter described his year, month by month, as crop technician for the Brubaker farm. Hostetter, who covers 37 farms in Juniata, Perry, Huntingdon, and Mifflin counties, works with farmers to save them as much money as possible, using chemicals only when needed.

Hay samples were judged by John Baylor after Lynn Hoffman discussed the value of various tillage methods. Jim Huber of Triple H described the drill demonstration.



Joel Myers, state agronomist for the Soil Conservation Service, explains the importance of determining residue that can act as a sod to prevent erosion.

