Agronomy Technical Note Ohio #6

AGRONOMY TECHNICAL NOTE: – OH-6

Successful Cover Crop Establishment:
Seed Quality and Herbicide Persistence; two important topics to review

Cover Crops provide numerous benefits and these benefits will not be maximized if a good stand of cover crops are not achieved. Achieving a good stand depends on weather, planting date, equipment, condition of the seed bed, fertility and many other things. This document is focused on two areas often overlooked in preparation for implementing cover crops into a rotation. Before planting cover crops on a particular field producers should evaluate the quality of the seed to be used and past herbicide that may affect stand establishment. With high quality cover crops and other conservation practices implemented within an operation you will see the soil health benefits that will not only improve your productivity but protect the valuable resources of the farm operation.

Seed Quality

The quality of seed used in conservation practices can have a dramatic effect on the success of the practice. The "Pure Live Seed (PLS) seeding rate" used by NRCS assumes all of the weight of the seed is seed that will germinate 100% of the time. Because not all seed is viable an adjustment needs to be made adding seed to the minimum seeding rate to account for the site specific seed quality being used. Additionally, NRCS is committed to preventing the spread of noxious, invasive and herbicide resistant weed species. Therefore all seed used in conservation practices **must have a seed tag or be tested for seed quality and percent weed seed prior to use.** The use of "bin run" seed is allowed in NRCS program conservation practices as long as the seed has been tested, the seeding rate has been adjusted for seed quality and the seed meets the minimum quality as specified in all applicable laws.

Seed Testing

Producers wishing to use uncertified seed sources (bin run, client harvest, or bulk seed sources) for NRCS program practices **must** have that seed tested by a reputable lab that reports the following:

1. Purity
2. Germination
3. % weed seeds

For additional information on seed testing contact:

Ohio Department of Agriculture
Division of Plant Health
Grain, Feed, & Seed Section
8995 E. Main St
Reynoldsburg, OH 43068
Phone: (614) 728-6410

Herbicides Persistence and Cover Crops

With the increased awareness of herbicide resistance and other problematic weeds many herbicide programs are including long lasting residual herbicides. Herbicides applied to the previous crop can have an effect on the next crop or the following cover crop. These types of herbicides may affect stand establishment and growth of sensitive cover crop species. The desired soil health benefits from planting a cover crop may not be realized if an adequate stand is not achieved.

There are two major factors in determining the potential carryover injury to the next crop. First of all; how long does the herbicide last or persist in the soil assuming that it has soil activity. Several factors influence the rate of dissipation such as rainfall, soil texture and soil pH, etc., however, most guidelines generally are for "normal" conditions (e.g. not severe drought or abnormally wet seasons). Secondly, species sensitivity can play a role if only a small amount of residue is necessary to cause injury and the herbicide persists. Quite often, small seeded legumes like the clovers and small seeded grasses like ryegrass and mustard species like canola are very sensitive to some herbicides.

When implementing a new cropping system that includes cover crops careful consideration should be given to herbicides used and cover crop specie selection. Producers should consult CCAs, private crop consultants, herbicide retailers and/or other experienced producers in making these important decisions. Producers should always follow herbicide label recommendations and restrictions. The ultimate goal is to develop an overall system that meets the weed control objectives while allowing timely cover crop establishment with the desired species. Producers may need to consider altering herbicide programs or cover crop specie selection to meet these goals.

Herbicides Persistence

Producers wishing to incorporate cover crops into their cropping system should consider current herbicide program. Careful consideration should be given to herbicides used and cover crop specie selection to reduce the risk of carryover effecting cover crop establishment.
Producers should consult and follow:

1. herbicide labels
2. CCAs and private crop consultants
3. herbicide retailers
4. experienced cover crop producers