

Legume overseeding builds soil, lowers N costs

BY TRISH WILLIAMS
KUTZTOWN — The term organic farming to most commercial farmers does not connote a viable way to make a living in agriculture, as Jerry Webb points out in his column this week (see C-7). But as Webb also points out some commercial farmers are beginning to take a more serious look at organic cultural farming practices.

Rodale Research Center in Maxatawny, just northeast of Kutztown, has been involved in developing organic cultural farming practices since the 1930's. The original research center was started by J.I. Rodale, in Emmaus, and focused primarily on organic gardening. In 1970, a 305 acre farm was purchased in Maxatawny to allow demonstration of the organic method in commercial production of crops. In 1974, the Rodale Research Center was established on the Maxatawny farm, and soon after the term regenerative agriculture was coined to give a more positive description to the organic farming practices. The research farm is modeled after a university experiment station, and welcomes visitors to tour the research farm.

To accommodate the ever increasing number of visitors to the center, a self-guided tour through the garden and field plots was established. According to Martin Culik, research agronomist, commercial farmers are taking more interest in the research he and his co-workers are conducting.

The concept of regenerative agriculture, of growing food without depleting the soil, without depending so heavily on pettochemical-based products, and without endangering wildlife or human health, certainly has a lot of appeal to consumers.

Regenerative practices can help cut production costs, by decreasing the need for nitrogen levels as well as other nutrient costs, and eliminating the costs of pesticides.

Of particular interest to commercial farmers is a three-year study that is presently being conducted on overseeding legumes into corn and soybeans.

Bob Hofstetter is the project leader for the overseeding study that began in the spring of 1982. According to Hofstetter, there are several reasons for the research with legumes.

"All species of overseed sods provide a living mulch, thus reducing soil erosion and potentially increasing the water holding capacity of the soil," states Hofstetter. "Legume sods, in addition to the above mentioned capabilities may supply sufficient amounts of nitrogen for corn and soybeans. The simultaneous growing of a legume sod and a grain crop could reduce the need for off-the-farm nitrogen for succeeding crops"

Hofstetter has concentrated most of his research on corn, but also is working with overseeding legumes into soybeans. The nitrogen requirement for soybeans is not as great as for corn, and soybeans form a dense canopy when in full leaf that dramatically limits the growth of the legume. Hofstetter sees more potential benefit of overseeding in corn than in soybeans.

Because no chemical herbicides or pesticides are used on the Rodale research farm, Hofstetter must control weeds by cultivating prior to seeding the legume. The idea being that after the legume is established it will control weeds by its own growth.

Fields are plowed, disked and cultipacked prior to corn planting. Hofstetter, with cooperation of the weather, plants the corn plots between May 5-15. He plants at a rate of approximately 23,000 seeds per acre, with a desired population of about 20,000 plants per acre.

There are a minimum of two cultivations, but as many as needed must be done before overseeding.

The overseed species is drilled at first or second cultivation. The overseed species is planted at its recommended rate.

Hofstetter and the farm mechanic adapted a three-point hitch cultivator with a seed box from a drill. Now he is able to perform both the second cultivation and the legume seeding in one pass through the row.



Bob Hofstetter drives the cultivator that he adapted with a seed box from a John Deere drill. This ingenious piece of equipment allows Hofstetter to cultivate and plant the overseeded species in one pass through the row.

"Sod species selection should complement your cropping system and not hinder management and production," says Hofstetter.

Hofstetter is working with the following overseed species in his research: hairy vetch (winter annual), medium red clover (biennial performance), Mammoth red clover, Austrian winter pea - var. Certified Melrose (summer annual in the North), Ladino white clover, and White Dutch clover.

Hofstetter says, "Factors to consider in selecting the proper legume sod for crop overseeding or interplant systems are: varietal adaptability to your region, (Turn to Page A39)



Research intern, Sandy Rieger, broadcast seeds the overseed species of legume by hand into the smaller research plots.

USDA official visits Lancaster

U.S. Agriculture Department official Richard Siegel, on tour of southeast Pennsylvania, visited the Lancaster county Farm and Home Center and met with members of the extension and soil conservation services.

Siegel, deputy assistant secretary for natural resources and environment, met with conservation leaders at an informal lunch and then toured two conservation projects in Ephrata. On a tour which will end in a meeting with the Pa. Association of Conservation Districts in State College, Siegel said he likes to see

different projects and learn about their applications.

The two farm Siegel visited were Dandi-Lee Farms and Indian Run Farm. Dandi-Lee, owned by Daniel W. Fox, Springville Road, Ephrata, consists of 74 acres and 65 head of dairy cattle. Conservation measures practiced there are grass waterways and an agricultural waste storage facility. Future conservation practices will include stream bank management and the use of contour farming in planting crops.

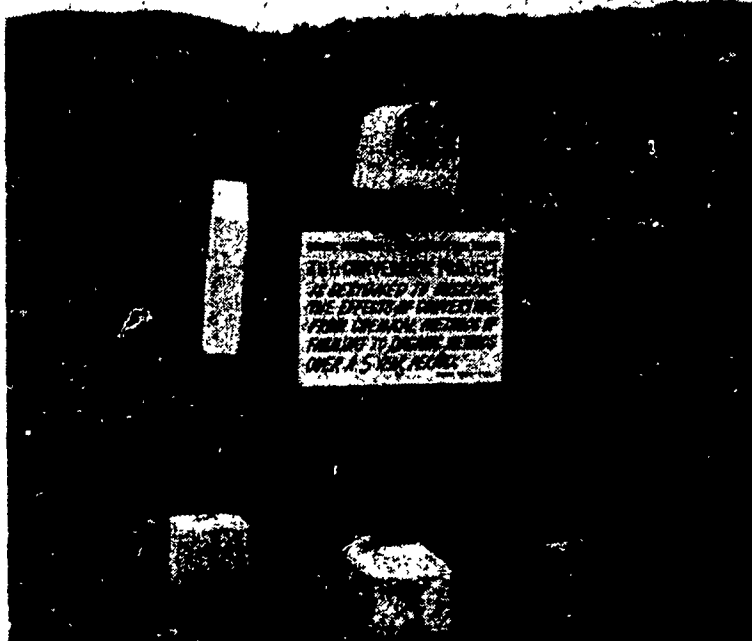
At the Indian Run Farm, owned by Aaron Z. and Elva J. Stauffer,

Stevens Road, Ephrata, Siegel saw the use of Terraces, piped outlet terraces and grass waterways. The Stauffers, who farm 69 acres and raise 32,000 broilers, 120 farrow to finish sows and 100 beef cattle, plan to build an agricultural waste system and additional terraces.

The two projects are planned to help limit soil erosion. Of projects such as this, Siegel said that soil conservation is a main priority and plans are underway to deliver services more efficiently and target efforts to areas in greater need of conservation practices.



Deputy assistant secretary for natural resources and environment Richard D. Siegel, second from right, met with conservation leaders at the Farm and Home Center, Lancaster, on Thursday, during a tour of southeast Pennsylvania. Pictured, from the left, are Jay Irwin, county extension agent; Amos H. Funk, vice chairman Lancaster Co. Conservation District; James H. Olsen, state conservation department; Aaron Z. Stauffer, chairman Lancaster Co. Conservation district; Siegel; and James E. Huber, director and county commissioner.



The Center is studying the effects of converting a neighboring, rented farm from chemical methods of farming to organic methods over a five year period.