

Final Report for 1995 SARE Grant

Cover cropping and Underseeding in Flow and Grain Crops

In the summer of 1995 we carried out our SARE project underseeding mammoth red clover in 50 acres of grain corn on flood plain land of the Missisquoi River in North Troy, Vermont. A Herd electric broadcast seeder was purchased with SARE funds and modified to fit onto the cultivator toolbar in the back of the tractor. Cultivation was done with an older IH 756 row crop tractor with a mid mount cultivator attached just behind the front axle. The corn had been cultivated twice ~~in~~ in June and weed control had been good.

The underseeding of the clover was done on the third ^{pass} or ~~two~~ "lay-by" cultivation. For this job all but one

shank was removed for each of the six rows ~~was~~ ~~removed~~ and an extra-wide ten inch sweep was attached. This was done so that only the middle of the row was cultivated and no root pruning of the corn plants would take place. The electric grass seeder broadcast the clover seed off of the rear of the tractor. The rear tool bar also had sweeps for removing the wheel tracks of the tractor from the row. Clover seed was broadcast at about 20 pounds to the acre on the surface of the newly settled ground.

The clover germinated slowly since 1995 was an extremely dry summer. North Troy was a lucky location because it received numerous thunder showers

that avoided other areas. The clover was seeded between the tenth and fourteenth of July, into corn which was already waist high in many areas. By about the first of August little clover seedlings could be seen in the standing corn.

We had an open house - field day in late September of '95 to show our project to the public. Unfortunately only a couple of people showed up. One was Susan Hallow, an agricultural journalist who wrote a short piece for the "The New England Farmer". A bit later in October Sherry Russell from "The New England Country Folks" publication came and took some pictures and did a short article for that paper. Also the "Across the Fence" program from WCAX

television in Burlington, Vermont did a short documentary on us and the SAFE project. So despite lack of field day visitors, publicity and outreach was fairly wide spread.

At corn combining time in late October and early November the clover had become a mat in the standing corn band had attained a height of two to four inches. Probably if the summer had had more rainfall, the clover might have gotten taller - up to the six to eight inches we had hoped for. However in the farming business, mother nature is in control and we must accept what is given to us and be satisfied.

The spinoffs from this project have been numerous. Several interested parties have called and put underseedin

One farmer in particular, Vince Foy, an organic dairy man from North Ferrisburgh, Vermont has used the clover under seeding every year in his corn since 1996.

After completing the project I have had several years to consider its advantages and disadvantages. The original intention was to do a nitrate test the following spring to see if any significant gains had been made in this department. Several factors discouraged me from doing this. First the clover under seeding got pretty well silted over following the next spring's normal flooding and high water event. Secondly, the next year's crop was soybeans which really didn't need a nitrogen kick since they are a legume. Thirdly, I realized that the nitrogen

cycle, especially in an organic cropping regimen is not something set in stone where debits and credits can be added or subtracted and weighed against the uptake needs of the next crop.

I think the clover or any other green crop is more important as biomass to be reincorporated and as food for soil life and bacteria. A well fed soil life will digest plant material and crop residue and gradually release nutrients in a non leachable form to next year's crop.

I will continue to underseed my corn crops but am now using winter rye instead of mammoth red clover.

The rye is quicker to grow and forms a better mat with more biomass. It survives the winter and high water

better than the clover. Rye also has an allelopathic effect on weeds and will help to eliminate quack grass

from row crops. This is a great benefit in an organic cropping system where herbicides like Round up are not used.

Also rye is much less expensive than clover seed and can be more easily produced on the farm than clover seed.

Cost difference is \$7-15/acre for rye seed $\$$ versus \$30-50/acre for clover seed.

The SARE program enabled me to try a project which I otherwise might not have done. I have spoken to numerous other farmers about it. I have come to the conclusion that cyl is a better crop than clover. I would like to see SARE help as many farmers as possible with non chemical approaches to weed control. I thank you very much.

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