

CONSERVATION IN PERSPECTIVE - FARMING

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First of all, may I say that in my opinion, no farmer deliberately sets out to harm our soils. But whether from financial restraints, lack of knowledge, or environmental factors, there are undoubtedly things that could be done differently. However I do believe that in the area that I farm, the soil is in better shape today than it was 20 years ago, mainly due to more intensive cropping and erosion control measures that have been practiced over the years. This does not mean that we have reached the ultimate in soil conservation, but indicates that progress is being made.

When we talk about conservation farming, I am sure we all recognize that this topic can be addressed from many directions. Because of the large variation we have in climate, soil types, and topography in our province, I do not believe we can lay down blanket recommendations, but they must be adaptable to specific conditions that exist in specific areas.

Some of the problems that have been identified are, loss of organic matter, spread of salinity, and erosion by wind and water. Wind erosion certainly made itself well known last spring. Even though the soil in my immediate area was not blowing, when the south winds blew in the dust, cutting visibility to about a mile, it certainly indicated that there must be a better way of farming than what has been traditionally practiced. It is true that man cannot control the wind and the rain, but ways and means must be found to minimize the effects of too much or too little.

When we talk about conservation farming, the first thing that must be done is to identify just what the term means. While the term may mean different things to different people, to me, conservation farming means that we at all times, endeavour to farm in such a manner as to minimize the loss of topsoil, organic matter and nutrient reserves in our soils. I do not believe it is possible to eliminate the problems completely.

I am very pleased that our governments, provincial and federal, are recognizing that problems are developing with our land base, and are committing funds and personnel to help alleviate the problem.

Our research people from Agriculture Canada, Saskatchewan Agriculture, and the University, have done a very commendable job on our behalf, and in the 31 years that I have been farming, I have seen the transition from one-half summerfallow, to strip farming, to one-third summerfallow, extended rotations, continuous cropping, to some no-till with winter wheat. This transition has not been without problems though, we have doubled our seeded acres by going from one-half summerfallow to continuous cropping, and the management of these acres has probably tripled. Quackgrass and thistles have become a problem. We have become completely dependant on chemicals for weed and pest control, and when the weather does not co-operate, results from these chemicals can be much below expectations. Continuous cropping has also contributed to the spread of plant diseases and the increase in insect pests such as the wheat midge. Smut is also becoming a problem in a lot of the cereal varieties we are growing today. I mentioned this problem to one of our researchers, and he replied that seed could easily be treated for smut, so this was not one of the major considerations in developing new varieties. It is true that control can be achieved through treating seed, however, that once again means using more chemicals, and I like other farmers, do not enjoy handling and using chemicals more than necessary.

When Dr. Rennie made his statement, some years ago, that summerfallow acres had to be drastically reduced, I called on a farm management specialist from Saskatchewan Agriculture and together we did an economic study on my farm using my production costs for the year and average yields. Wheat was the crop used in the comparison of three cropping alternatives which were: (1) one-third summerfallow, (2) one-third summerfallow with plow down clover, and (3) continuous cropping.

One-third summerfallow with the plow down clover gave me the highest net return, and the difference between this and the straight one-third summerfallow was the 35-50 pounds of nitrogen we expected to get from the clover. If wheat was \$6.00 per bushel or higher, continuous cropping then gave me the highest return. We have to recognize though that there are a lot of benefits from extended rotations and continuous cropping that cannot be measured in dollars and cents. Costs of production also vary from year to year, yields vary, price of wheat changes, and I do not think we would want to grow wheat continuously on the same land every year. As I said, wheat was

used for ease of comparison.

Some of the land I farm has a slope to the north, and we do continuous crop these acres as much as possible to control water erosion. We are gradually moving towards cropping all our acres every year.

It was indicated to me that I should express some comments on conservation farming from a farmer's viewpoint as to what research is needed, policies that should be implemented by governments, economic realities for farmers, and education - extension component.

Research that is needed:

1. With the salinity problem spreading, I believe it is imperative that the mapping of our soils be completed as quickly as possible. The extent of the problem will then be known and corrective measures can be developed and implemented. The development of salt tolerant crops could be very beneficial.
2. Research is required to determine the best use for land that is subject to erosion by wind and water, and also the corrective measures that are required.

The area where I farm is subject to water erosion; we have for many years been involved with a water shed association where farmers work together to establish grassed waterways, divert small water runs into larger ones, etc. This work was pioneered by Saskatchewan Agriculture and P.F.R.A. in the early 1950's. I can recall my father spending over \$4,000 filling in a washout on one quarter after the spring runoff. It was problems such as this that these watershed associations set out to correct, and this was accomplished very effectively. Extended rotations and continuous cropping have also helped control the problem.

3. We need more emphasis on the use of legumes in cropping rotations, as well as require legumes that are lower in water usage, high in forage and nitrogen production.
4. Some years ago, the Lethbridge Research Station indicated they had a major breakthrough on wheat that would produce its own nitrogen requirements. We have heard nothing more since that time, but I believe it would be most useful to develop cereals and oilseeds that would produce their own nitrogen, both from a conservation and an economic viewpoint.
5. We require the development of winter hardy varieties of cereals and oilseeds with greater disease and cold resistance.
6. Develop perennial crops that can be grown successfully and profitably.
7. We should have an economic study at the farm level, as to what soil erosion and loss of organic matter is actually costing us farmers, also the expected financial benefits that can accrue by using conservation methods on the farm.

8. Research is required to provide chemicals, for weed and pest control, that are cheaper, less affected by climatic conditions, more effective while remaining safe to use. At the same time we should be searching for alternatives to chemicals.
9. If the no-till farming concept is to proceed, then we must have alternatives to soil incorporated chemicals, that are as effective.
10. The Department of Highways spreads tons of salt on our highways during the course of a winter. This salt is bound to run onto adjacent land with the spring melt. Recognizing that lives are undoubtedly saved by the use of salt, I feel it would be useful to research what effects this salt is having on farm land, and if found detrimental, that alternate ways of de-icing roads be explored, or salt be used more discriminately.
11. Research to determine the effects of soil compaction under intensive farming situations.
12. Research the benefits of snow trapping in various regions of the province. Where I farm, we normally receive a fair amount of rain in the fall, and if the ground freezes before the snow comes, we find the more snow we trap, the larger the sloughs are in the spring.
13. One farmer recently commented that the demand for golf courses appears to be far greater than for wheat, possibly we could research this demand and aid conservation as well.

I was somewhat disturbed to read an article in the last issue of the Country Guide, in which a soil scientist from the Research Station at Swift Current, stated that they have found that the regular use of nitrogen fertilizers have been found to raise soil acidity, and that acidic soils could seriously affect crop yields. He goes on to say, and I quote, "Soil scientists are recommending continuous cropping to reduce soil degradation. This will result in greater use of nitrogen fertilizer and could induce soil acidification. The soil might improve from a degradation point of view, but we may have to work harder to maintain a favorable pH level."

It appears to me that we are getting caught, so to speak, between a rock and a hard place. All I will say is that I hope we do not become so conservation conscious that we can no longer make a living farming.

Policies that should be implemented by governments:

1. The provincial government is to be commended for the Water Erosion Control program that is in effect, and also for the FarmLab Program. This program provides funding and expertise to demonstrate research projects under field conditions at the local level. A lot of farmer interest is developing in the FarmLab projects and I would hope that both of these programs will be maintained.

2. Governments should give higher priority to the soil conservation issues, together with increased funding for research and practical application.
3. Provide increased funding for educational institutions to train people specifically for soil conservation work.
4. Provide funding and expertise for the establishment of soil conservation groups throughout the farming area. Farmers, I believe have a lot of practical expertise to offer, and if a forum was provided for them to identify local needs, to researchers and governments, they would be able to make a very significant contribution to soil conservation issues.
5. Establish demonstration farms in various areas where farmers can see it first hand, the merits or detriments of conservation farming.
6. Provide toll free telephone numbers to Ag. Rep. offices and research stations. A lot of government departments have toll free numbers, so why not agriculture. As well, it would probably encourage farmers who do not presently use these services to use them.
7. Provide expertise and information on the salinity problem.
8. Changing farming practices usually requires the addition of expensive and sophisticated machinery. Tax incentives could be one way of encouraging these expenses.
9. Promote livestock production to compliment grain production, if this can be done profitably.
10. Develop markets for specialty crops which can be successfully grown in crop rotations. I recently read an article which stated that Australian researchers have developed a flax variety from which they can produce a high quality edible oil. I hope and trust we also will have it in Canada shortly.
11. Bonus acres in the Wheat Board permit book. While controversial, these have reduced summerfallow acres very successfully.
12. I am very concerned about the cut-backs in staff and budgets for agriculture that are taking place, both provincially and federally. Even though we are in an era of budget restraints, I believe more funding and personnel should be provided for agriculture, so that our most important industry can develop to its fullest potential.
13. The transition to conservation farming I hope will be a process of education, rather than legislation.

Education and Extension

Trained personnel with the required expertise are needed, to educate farmers on the merits of adopting conservation methods of farming.

By and large, I believe our extension people are doing an excellent

job on our behalf. With new technology advancing rapidly, it is becoming increasingly difficult for us farmers to keep up, therefore I believe we will use our extension resources more and more in the future. Seminars, such as this one, are a very valuable tool and should be encouraged.

Farmers, in my opinion, are farming in the manner they are most comfortable with, and which they feel is the most financially rewarding to them. Because of these factors, we are somewhat reluctant to change our operations. If increased net returns can be expected from adopting farming methods that will successfully contribute to conserving our soils, we will respond.

I suggest that farming is not a RIGHT, it is a privilege. We do not own the land as such, but have purchased the rights to farm it during our lifetime. I hope and trust that one of our goals as farmers is to leave the land in a little bit better shape than when we got it.

Sometimes, I like some of you, being bombarded with commercials, paper work, trying to balance the books, income tax, lack of rain, etc. tend to become a little discouraged. Let me close with the story about the old woodsman who was showing some tourists how to catch a porcupine. First he said, you find an old washtub, and watching out for the slapping tail, you drop the tub over the porcupine. This won't solve your problems as to what to do next, but at least you'll have something to sit on while you contemplate your next move.