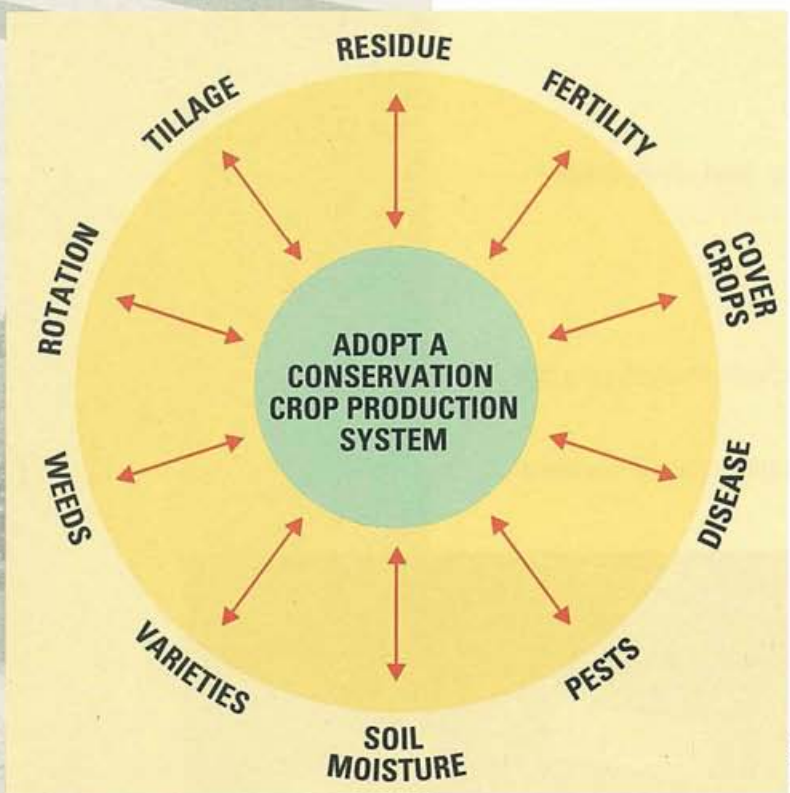
APPROACHING CHANGE

THE SYSTEMS APPROACH

A crop production system includes all of the components that you can control while growing crops, such as production practices, products used and soil characteristics.

To maintain production at profitable levels, you must consider a **conservation** crop production system. Careful attention to each component of a conservation crop production system will ensure both profitability and environmental responsibility.

Develop a system that works on your farm. Start by carefully analyzing the following:



Don Lobb.

Components of a crop production system.

- ▸ Topography.
- ▸ Soil type.
- ▸ Livestock requirements.

Get technical assistance to understand the possible effects of each change in production. This will ensure that change is profitable and effective.

- ▸ Many of the components which you can control are listed outside the crop production circle.
- ▸ Each component affects the production system and the system affects each component. Each time you change one part of your system, such as tillage or herbicide, there may be a chain reaction. Consider how a change might affect other components (see examples on next page).
- ▸ If you use a combination of practices and products which are complementary, crop yields will increase.
- ▸ Considering the impact on other system components applies to any new practice no matter what tillage system is used.
- ▸ Tillage is only one crop production component. Changing tillage will not necessarily change yields more than a change to another component.
- ▸ The application of this approach to new crop production practices improves the chance of good results.

THE SYSTEM IN ACTION

Let's look at some examples:

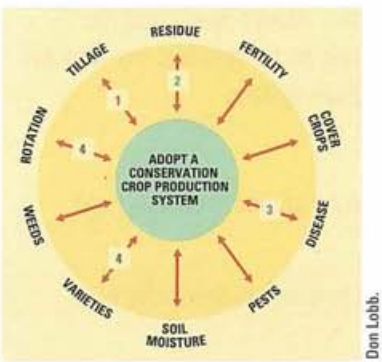
A producer using mulch tillage or conventional tillage decides to grow a red clover cover crop (1)seeded into wheat. The reason for the change is to improve soil structure and to reduce the need for commercial nitrogen for a corn crop which is to follow.

Don Lobb.

Because of the change, fall weed control of field bindweed is not possible because the herbicide used regularly would kill the clover (2).

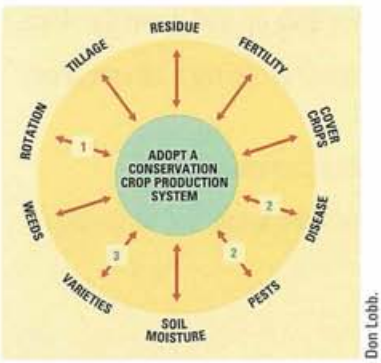
Now, the system needs a new weed control program for the bindweed. It will now be sprayed while it flowers during the corn crop season. However, the corn variety used may have low tolerance to the herbicide (3) so a new corn hybrid has to be selected to maintain yield.

By introducing one change, a chain reaction begins. A cover crop change leads to altered weed control which leads to a change in corn varieties.



Don Lobb.

In another case, a producer decides to use no-till corn production to reduce soil erosion and equipment costs. The following chain reaction takes place: The move to no-till corn (1) leads to increased residue (2) which in turn increases the risk of stalk disease (3) which causes the producer to re-select the corn variety for disease tolerance (4) or to change the crop rotation (4) to limit disease carry-over.



Don Lobb.

And finally, a ridge till producer decides to change his crop rotation from corn/corn/soybeans to corn/soybeans/wheat to eliminate the use of a corn rootworm insecticide. A secondary benefit is improved corn stalk quality. Therefore, he selects a new variety to make sure corn yield is increased. The chain reaction is as follows: The change in crop rotation (1) reduces the use of pesticides (2) and reduces plant disease (2) which allows a change in corn variety (3).

Remember, to make your system work, consider how a change of one component will affect the other components in the system.