

An Emphasis on Rotations

by Dwayne Beck

TECHNIQUE

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Photo by Matt Hagny

The following was included in the proceedings for the SD No-Till Association's "No-Till Under Cover" conf. (Feb. '03), and also No-Till on the Plains' Winter Conference 2003. Edited here.

Yes, it's worth reading again.

Determining what to grow as rotational crop(s) and how they will be sequenced can be a complex process. There are however some general guidelines that can be extremely helpful in beginning the process. Consider this to be 'Beck's Top 10 List.' The order they appear does not denote their importance.

1. Reduced- and no-till systems favor the inclusion of more diverse crops. Tilled systems may not.
2. A two-season interval between growing a given crop or crop type is preferred. Some broadleaf crops require more time.
3. Chemical fallow is generally not as effective at breaking weed, disease, and insect cycles as are black fallow, green fallow, or production of a properly chosen crop (or cover crop).
4. Rotations should be sequenced to make it easy to prevent volunteer plants of the previous crop from becoming a weed problem.
5. Producers with livestock enterprises find it less difficult to introduce diversity into rotations. (Use of forage or flexible forage/grain crops and green fallow enhance the ability to tailor rotational intensity.)
6. Crops destined for direct human food-use pose the highest risk and offer the highest potential returns.
7. The desire to increase diversity and intensity needs to be balanced with profitability.
8. Soil moisture storage is affected by surface residue amounts, inter-crop period,

ability of stubble to catch snow, rooting depth characteristics, soil characteristics, precipitation patterns, and other factors.

9. Seedbed conditions at the desired seeding time can be controlled through the choice of the previous crop(s), with differing characteristics in regard to residue color, amount, distribution, and architecture.
10. Rotations that are not consistent in either crop sequence or crop interval guard against pest species shifts and minimize the probability of developing resistant, tolerant, or adapted pest species.

Classification of Rotation Types

It is sometimes easier to discuss concepts if they are placed into categories of some sort.

We have developed the following scheme with this in mind. This classification is totally arbitrary and is meant to serve only as a tool to help understand rotation planning.

Simple Rotations: Rotations with only one crop of each crop type used in a set sequence, using only a single-year of each type. This is the most common rotation.

Examples: 1) Winter Wheat >>Corn >>Fallow; 2) Wheat >>Canola; 3) Spring Wheat >>Corn >>Soybean;



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Whatever your rotation, both sequence and interval are critical. In some climates, soybeans provide an excellent transition from the summer grass crops (corn & milo) into wheat.