

The Systems Approach

It is over simplistic to classify rotations as good or bad. Rather it is best to think of rotations as having differing characteristics in terms of their impacts on various aspects of the crop production system used by a particular grower in any given environment.

Designing appropriate crop rotations is a mix of art and science. Since all aspects (agronomic, environmental, economic, engineering) must be considered simultaneously, a systems approach is required.

Initial factors of most importance include:

- crop water use patterns (critical periods, rooting depths, and peak use periods),
- soil properties,
- historic rainfall patterns,
- snow catch ability,
- disease organisms,
- insect cycles,
- phytotoxic effects of residue,
- weed habits,
- profit potential,
- equipment needs,
- optimum row widths,
- seeding and harvesting dates,
- workload spread,
- individual attitudes, and
- access to markets.

For any given situation, there will be a range of rotations that will be agronomically appropriate. Within this range are rotations which have differing characteristics in terms of the risk they pose (market availability; labor or machinery requirements, etc.) which may make some more suitable for use in a particular location. **Management decisions must be made by individual producers to select the rotation or combination of rotations that is most appropriate for them.**

Economics

Proper crop rotation is a potentially powerful tool that can be used to manage risk and improve efficiency. Each operation must tailor the crop rotations used to the needs of that specific operation. Different fiscal and physical circumstances will dictate using different rotations. The goal of this publication is to offer methods that can be used to develop some of the skills needed for proper rotational planning.

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