

Conservation Crop Rotation



Lush grass covers what is typically a crop field. Allowing for fallow periods, rotating crops and cover cropping in spring/fall ensures that soils can recoup nutrients lost during the growing season.

What

Conservation Crop Rotation is the growing of crops, including cover crops, in a planned sequence over one year or more on the same acreage. It is an appropriate management system for any farmer who grows at least some annual crops and whose soils are for some part of the year exposed to erosion. In this system, annual crops are typically rotated in and out of production in combination with other crops and various grasses and legumes. This provides a number of benefits both from an agronomic and environmental standpoint.

Why

Crop rotations can improve soil health and increase yields by boosting soil organic matter, improving soil tilth, and producing and managing a balance of plant nutrients. In many cases, rotation can address competition from weeds. Rotations can also reduce insect and disease pressure by removing hosts and alternate hosts and by introducing species that attract beneficial organisms. The system is also designed to reduce runoff and erosion while maximizing soil health, crop returns, forage availability, and farm sustainability.

How

Planning for a conservation crop rotation includes specifying the location of plots and acreage, defining the purpose for the crop

rotation, and identifying the type, sequence, and duration of the crops.

State and Federal cost share funds are usually required to design crop rotations to meet standards. These standards insure soil health by building a rotation plan that takes into account rotation length, plant rooting depth, plant nutrient yield or demand, growing season requirements, fertilizer or manure application, and others.

A rotation plan might include alternating cool season with warm season crops; incorporating a nitrogen-fixing grass and legume crop grown over one or more years; following deep rooted species with more shallowly rooted species; avoiding consecutive years of annual plants in the same family and protecting soil from ero-

sion between crops by growing green manures or ensuring a high-residue cover remains after harvest. Growers will also want to build rotations with the goal of minimizing the weed seed bank and thus the need for cultivation; to that end, it is important not to plant long-term covers when weed pressure is high and weeds are likely to go to seed within the cover crop.

Costs

While every rotation plan will be different, one commonly used practice — an autumn sowing of winter rye into a silage corn field, and terminated before spring planting — may cost about \$85 an acre. Other covers are more expensive, such as hairy vetch and clovers, but these can provide significant savings because they provide legume nitrogen to a subsequent crop, reducing the need for fertilizer application. See Cover Cropping practice for more information.

Associated and Complimentary Practices

- Conservation Tillage
- Cover Cropping
- Nutrient Management
- Integrated Pest Management

Benefits



Strip Cropping



Strip cropping is one of the least costly measures available to farmers to reduce erosion.

What

Strip cropping is the planting and growing of alternating strips of erosion-resistant crops with strips of erosion-prone annual crops. The strips are systematically arranged across a field as close to the contour as possible. Strips are sized to accommodate multiple or full-width passes with tilling, seeding, harvesting or other equipment and are usually of equal width. Erosion-resistant crops such as legumes and hay and erosion-prone annual crops such as corn for silage can be used.

Why

Strip cropping can improve crop yields by encouraging infiltration and thereby increasing soil moisture. Strip cropping is one of the least costly measures available to farmers to reduce sheet and rill erosion.

By helping to keep soil in place, strip cropping protects water quality and with it aquatic habitats. Strip cropping is also visually appealing and enhances the attractiveness of the agricultural landscape.

How

Strip crops can be established on a variety of crop fields and managed to suit the field conditions. A rotation plan for the strips should balance the goals of controlling erosion, protecting soil health, and maximizing crop yields.

Choose a strip width based on the slope of the field and its soil types. Federal and State Agency professionals can help farmers choose a width based on erosion prediction technology. Also consider the widths and turning radii of the equipment which will be used on the field. A width accommodating some multiple of full-width passes along the strip will be the most efficient. If possible, run strips square to fence lines or other barriers. Some smoothing of sediment at the interface of strip edges may be occasionally necessary.

Costs

Costs associated with strip cropping are similar to those for a farm's field preparation and planting rates.

Associated and Complimentary Practices

- Conservation Crop Rotation
- Conservation Tillage
- Cover Cropping
- Nutrient Management

Benefits

