



OPTIMIZING CROP ROTATION

Optimal crop rotations deliver environmental benefits by improving soil structure and nutrient management by reducing erosion and allowing greater flexibility in pest management. For dairy farmers, optimizing crop rotation could mean adding pulses, forage or legumes into the rotation as another way to provide environmental benefits. Adding a legume, for example, will reduce fertilizer needs (nitrogen) the following growing season.

Benefits



Carbon sequestration



Increased resiliency to the effects of climate change



Improved soil health



Enhanced biodiversity

Implementation Tips

- Plan your crop rotation to maximize soil nutrients and carbon storage. Consult an agronomist/agrologist for recommendations.
- Consider incorporating a legume before a nitrogen-intensive crop.
- Diversify crop rotations with perennials, small grain cereals, cover crops, or add one or more annual crops in your cropping sequence. Consider spacing crops susceptible to the same diseases in the crop rotation cycle. Avoid growing the same crop two years in a row in the same field, especially soybeans (susceptible to Sclerotinia) and wheat (susceptible to Fusarium).
- Consider rooting depth and time to maturity in your crop rotation to optimize water conservation.
- Incorporate perennial forages for a minimum of three years in the rotation (see following BMP).



Estimated return on investment
Medium



On-farm emission mitigation potential +++

Resources

- **Webpage:** Principles and Practices of Crop Rotation, Government of Saskatchewan (dfc-plc.info/OPCR1)
- **Webpage:** Crop Rotation, Saskatchewan Soil Conservation Association (dfc-plc.info/OPCR2)
- **Webpage:** Strategies to Improve Winter Survival of Legumes, Lactanet (dfc-plc.info/OPCR3)
- **Research study:** Diverse crop rotations shown to increase yields, improve soil health and lower GHGs, Agriculture and Agri-Food Canada (dfc-plc.info/OPCR4)