THE BENEFITS OF COVER CROPPING

Saskatchewan, with its vast agricultural landscapes and challenging prairie climate, is a cornerstone of Canada's agriculture industry. As producers seek methods to improve soil health and productivity, cover cropping has emerged as an increasingly valuable practice. Cover crops — non-cash crops planted primarily to manage soil health, erosion, and biodiversity — offer numerous benefits particularly well-suited to Saskatchewan's environment and cropping systems.

1. **Soil Health and Organic Matter:** One of the most significant benefits of cover cropping in Saskatchewan is the improvement of soil structure and organic matter content. Cover crops, such as legumes (e.g., clover or vetch) or grasses (e.g., rye or oats), help add organic residues to the soil when they decompose. This process boosts microbial activity, improves nutrient cycling, and enhances the soil's ability to retain water—critical factors in a province that frequently experiences dry spells.
2. **Erosion Control and Water Retention:** Cover crops establish root systems that anchor the soil and provide a protective canopy, reducing the impact of heavy rain events and subsequent runoff. This conserves soil but also helps retain moisture in the field, which is essential for successful crop production in dryland farming systems.
3. **Weed and Pest Suppression:** Cover crops can serve as a natural weed management strategy. Species like cereal rye or buckwheat establish quickly and out-compete many common weeds for light, space, and nutrients. In Saskatchewan, where herbicide resistance is an emerging concern, integrating cover crops can reduce dependence on chemical weed control. Some cover crops also have allelopathic properties—releasing chemicals that inhibit weed germination—and can disrupt pest life cycles by providing habitat for beneficial insects or interfering with pest breeding.
4. **Nitrogen Fixation and Nutrient Management:** Legumes in cover crop blends, such as peas or alfalfa, can fix atmospheric nitrogen into the soil, reducing the need for synthetic nitrogen fertilizers. Following a legume cover crop with a cereal cash crop can result in improved yields and reduced input costs. Moreover, deep-rooted cover crops can retrieve nutrients from deeper soil layers, making them available to subsequent crops.
5. **Biodiversity and Pollinator Support:** Adding cover crops to rotations enhances biodiversity in agricultural systems. Mixed species cover crops provide habitat and food sources for pollinators, birds, and soil organisms. This ecological diversification can contribute to greater system resilience, helping farms adapt to climate variability and pest pressures.

While cover cropping in Saskatchewan requires careful planning, it offers a numerous agronomic and environmental benefits. By improving soil health, reducing erosion, managing weeds, and enhancing biodiversity, cover crops can play a pivotal role in building more sustainable and resilient agricultural systems across the province

The Saskatchewan Association of Watersheds supports the adoption of cover cropping beneficial management practices through the Saskatchewan Watershed Environmental Agriculture Program (SWEAP). Applicants will work directly with SAW's Agri-Environmental Coordinators to apply to SWEAP. Funding for this project has been provided by Agriculture and Agri-food Canada through the Agriculture Climate Solutions-On Farm Climate Action Fund (OFCAF).