

The Science of Organic Agriculture  
in Canada



**Martin Meinert's involvement in organic research has led to increased weed control and improved crop production on his farm.** Meinert is an organic farmer in Southwest Saskatchewan, and farms over 900 acres of land in the Palliser Triangle. He grows cereals, legumes, and oil seeds. Meinert is always looking for ways to improve the sustainability of his farm, and has close connections with organic science experts in Saskatchewan, like Dr. Myriam Fernandez and Dr. Steve Shirliff. He accredits many of the successes on his farm to the recommendations made by these researchers.

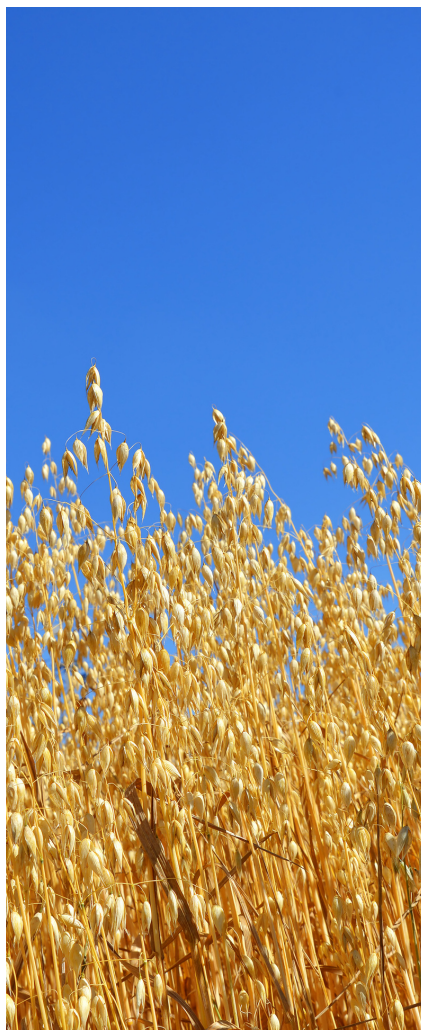
One practice that Meinert has had success with is using higher seeding rates. Dr. Shirliff suggested this as a method to reduce weed pressure. Meinert uses 2.5 times the recommended seed rate for single-seeded crops on his farm. Despite the higher cost associated with purchasing the additional seed, Meinert sees it as an investment in weed control; an organic alternative to purchasing synthetic herbicides to manage weeds as conventional farmers would. In addition, increasing the seeding rate does not require additional time or passes in the field. Meinert always leaves test strips for comparison and has observed differences in weed suppression between areas with higher seeding densities and those seeded at standard rates. Overall, he has noticed that in dry years the higher seeding rate helps combat weeds, while during wetter years the crops both outcompete the weeds and can produce higher yields.

Meinert also was a member of the advisory committee at the Swift Current Research and Development Centre when Dr. Fernandez led Organic Science Cluster 2, Activity A.5 looking at the impacts of reduced tillage and diversified cropping sequences under organic management. Meinert is working on reducing the amount of tillage used on his farm in order to reverse soil and environmental degradation. To do this, he direct seeds into his mown cover crops and does not pre-work the soil. Meinert finds in the dry conditions roller crimping does not work as desired. After seeding is complete/ during early crop emergence a rod weeder is used to terminate weeds.

Dr. Fernandez stresses the importance of having a diversified cropping system. She also suggests choosing regionally adapted cultivars well suited to the growing conditions. Over the years, Meinert has further diversified the crop rotations on his farm to help break disease, insect and weed cycles. Each crop contributes to the soil differently and supports the long-term health of the agro ecosystem. Despite the many benefits, there are also challenges such as cost and the need for additional storage.

As mentioned, Meinert uses cover cropping on his farm, but he also practices intercropping; both of which are subject to Dr. Fernandez's research. Both cover cropping and intercropping require managerial planning, however intercropping even more so. When planning for intercropping, the farmer must determine which crop is the main cash crop and be prepared to store and separate the seed even if the other crop ends up being more successful. The challenges often arise around seed separation, marketing, and storage. Farmers must also be cautious of the seeding rate and consider how the crops will compete with one another. Based on Meinert's experience to optimize results, the seeding rate should only be increased for 1 of the 2 plants.

Meinert uses innovative farming practices that have been studied locally to increase the sustainability of his farm. A combination of practices such as higher seeding rates, reduced tillage, and diversified cropping contributes to a healthy and productive farm!



ABOUT THE ORGANIC SCIENCE CLUSTER



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[www.dal.ca/oacc/OSC](http://www.dal.ca/oacc/OSC).

