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Agronomy highlights from western Canada: the new soybean frontier

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Canadian soybean acres reached 7.3M in 2017, up 33% from 2016. The increase is attributed to expansion in western Canada, where 2.2M acres were planted in Manitoba, and a two-fold increase since 2014. Short season variety development, favorable growing conditions and strong markets are important contributing factors. Agronomy research is a priority to develop region-specific best management practices, particularly for western Canada where canola is a major rotational crop, soils are calcareous, and the growing season is short and cool. In Manitoba, planting studies have identified an optimum plant stand of 140-160,000 plants/ac and yield benefits associated with narrow row spacing and earlier planting. Crop sequence studies suggest a more consistent yield response on wheat and corn stubble compared to soybean and canola. Soybeans are often planted without P fertilization as yield responses are very rare in Manitoba regardless of soil test P, rate or placement. Multiple on-farm studies are exploring the frequency of response to single vs. double and single vs. no inoculation in fields with varying soybean history. In western Canada, glyphosate resistant weed populations are currently limited to kochia, while volunteer glyphosate tolerant canola is the most common weed in soybean fields. An action threshold of 2-3 canola plants/m² has been identified as part of a study investigating volunteer canola prevention and management. A survey of foliar diseases in 2016 detected frog-eye leaf spot for the first time in western Canada. Ongoing surveys have not yet detected soybean cyst nematode. Currently, root rot, iron chlorosis, moisture variability, and frost risk are among the top production constraints. Five crops predominate 80% of acres in western Canada, compared to two in the major soybean growing region of the US mid-west. Extension efforts are bringing awareness to the importance of diversity and rotation, which is favorable for farmers in preventing pest management challenges.