Winter Annuals

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Extending the Growing Season-Winter Cereals in Western Canada

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Winter cereals provide distinct advantages over spring cereals. This includes capturing more moisture and sunlight from an extended growing period leading to higher grain and biomass yields. Further advantages include limiting weed pressure, soil erosion and exposure to multiple disease and insect pest which are regularly serious threats to spring cereal production. The story of winter cereals in western Canada is a marriage of the right agronomic practices with the right varieties. The agronomic system for winter cereals in western Canada is built around ensuring that the crop survives the winter. Critical to this system is uniform plant stands reaching the optimum growth stage to maximize cold tolerance and no-till production systems ensuring the maintenance of insulating snow cover through the utilization of stubble from the previous crop. The requirement for cold tolerant winter cereal varieties remains a focus for plant breeders; however, limited gains in cold tolerance have been realized in over 40 years. For wheat, major gains from a breeding perspective include the incorporation of robust disease resistance packages to ensure adaptation to growing conditions across the prairies, introduction of shorter, lodging resistant varieties, significant improvements in yield and the elevation of grain quality towards spring wheat levels. Fall rye and winter triticale lag in terms of similar levels of improvement; however, the recent introduction of hybrid rye to Canada and new high yielding triticale varieties targeted for grain, silage and double cropping means that the potential of winter cereals to be used to extend the growing season in Western Canada continues to be significant.


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