

## ASSBT abstract

Title: Management of Rhizoctonia root and crown rot disease in sugar beet with a fungicide-glyphosate tank-mix to improve farm efficiency

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Rhizoctonia root and crown rot disease (RRCR) caused by the fungus *Rhizoctonia solani* has been identified as the major disease problem affecting sugar beet by growers of the Western Sugar Cooperative. Growers typically resort to fungicides to effectively manage this disease with fungicide treated seed being the first line of defense. Seed treatments have been found under our conditions to be effective for up to six weeks after planting, at which point, foliar applications of fungicide are necessary. Although research has demonstrated under severe disease pressure fungicides applied in a foliar band to be more efficacious than a broadcast application, many growers broadcast fungicide for RRCR management. This methodology seems to work for producers under low to moderate disease pressure conditions. Since this fungicide application typically occurs around the time the second application of glyphosate would be applied to the beet crop; research was conducted at two sites in Wyoming to investigate the potential of tank-mixing separate treatments of azoxystrobin (Quadris®), fluxapyroxad + pyraclostrobin (Priaxor™) and prothioconazole (Proline®) fungicide along with glyphosate under both a low and moderate RRCR disease pressure scenario. Parameters measured included treatment effects on Rhizoctonia disease management, weed control, crop safety and beet root yield. Results from the two sites revealed that when glyphosate was co-applied with the various fungicides in a tank-mix there were no effects on both herbicide and fungicide efficacy and no evidence of crop injury. RRCR disease suppression was similar between the various fungicide-glyphosate tank-mixes and crop yields with fungicide-glyphosate treatment under inoculation, were similar to that of the non-inoculated glyphosate-only check. The results indicate that growers under moderate disease pressure can manage weeds and RRCR disease with a combined broadcast application thereby improving production efficiency with less trips across the field and maximizing yields and farm profitability.