

LANCELEAF SAGE COMPETITION WITH HARD RED SPRING WHEAT AND SOYBEAN.
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Field studies were conducted to evaluate competition of lanceleaf sage (*Salvia reflexa* Hornem) with hard red spring wheat (*Triticum aestivum*) and soybean (*Glycine max*). Lanceleaf sage is an annual broadleaf found throughout the central United States. Lanceleaf sage has slowly moved throughout North Dakota. Hard red spring wheat and soybean are two common crops grown in North Dakota, and they represent crops that are solid seeded and grown in rows. In hard red spring wheat and soybean, 60x60ft plots were established. Eleven to twenty one-meter square quadrats were randomly selected throughout the plot to evaluate the competitiveness of lanceleaf sage. Six plots of wheat and four plots of soybean were used for the study. Weed-free and crop-free quadrats were included at each site. Emergence dates and plant populations were recorded for all species. Lanceleaf sage plant height, width, and primary branch number were taken every two weeks after emergence. At harvest, biomass and seed production were measured for each species. Lanceleaf sage was not competitive with wheat and did not reduce wheat yield. Wheat produced a thick dense canopy, which inhibited the growth and development of lanceleaf sage. Mortality of lanceleaf sage in wheat was as high as 100%. Soybean yield was 71% lower with 58 lanceleaf sage plants per m² emerging with soybean when compared to the weed free check. Lanceleaf sage that emerged at the same time as soybean was nearly four-fold more competitive than lanceleaf sage that emerged 5 days after soybean. Wider row spacing and warmer temperatures at crop emergence allowed lanceleaf sage to produce a wide plant architecture when it emerged with soybean. Mortality of lanceleaf sage in soybean was as high as 58%.