GROWTH ANALYSIS OF LANCELEAF SAGE IN FOUR DIFFERENT NORTH DAKOTA SOILS. Mathew G. Carlson and Kirk A. Howatt, Graduate Research Assistant and Assistant Professor, North Dakota State University, Fargo, ND 58105.

Abstract. Lanceleaf sage is an annual broadleaf found throughout the central United States and has slowly moved throughout North Dakota. Greenhouse studies were conducted to evaluate growth rates of lanceleaf sage (*Salvia reflexa* Hornem.) in four different North Dakota soils to determine whether soil texture influenced severity of lanceleaf sage in North Dakota. Experimental design was a split-plot design with six replicates. Week was whole plot, and soil was subplot. Soil textures were loamy sand, silt loam, sandy loam, and silty clay. Lanceleaf sage seeds were planted in non-drainable pots. Soil was watered to fifty-percent field capacity daily. Nitrogen and phosphorus were applied to soil weekly based on initial soil nutrient tests. Nitrogen and phosphorus were applied at different rates to soil since soil nutrients varied in each soil. Plants were evaluated for height, width, leaf area, root volume, and root weight. Lanceleaf sage plants when grown in different soils had similar growth in height and width early in the growing season. Plant height increased rapidly to week five and then slowed for the next three weeks. Plants in silt loam and sandy loam were taller than plants grown in loamy sand and silty clay soils. Lanceleaf sage grown in sandy loam had the largest width for most of the study. Plant widths in silt loam, sandy loam, and silty clay soils were similar. Lanceleaf sage in sandy loam had the largest leaf area for most of the study, while plants in silty clay and loamy sand soils had the lowest leaf area for most of the study. Courser textured loamy sand and sandy loam soils produced plants with the largest root weight for most of the study. Finer textured silty clay loam and silt soils restricted root growth compared to courser textured loamy sand and sandy loam.

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