Sorghum and Corn Production on limited Water Supply in the Panhandle Region

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ABSTRACT

Due to continued depletion of the Ogallala Aquifer the irrigation capacity of crop producers in the Oklahoma Panhandle is declining. This combined with the potential for restrictions on pumping capacity requires that alternatives to the current production systems found in the region be evaluated. The dominate irrigated crop in the region is corn which is very much economically when water is not limited, due to its high yield potential. However, as water availability declines its production potential is known to rapidly decline. The purpose of this study is to evaluate the yield potential of sorghum compared to corn under limited water supply. Specifically, corn is irrigated with approximately 10, 14, 19, or 20 inches of water during the growing season. In contrast the irrigation rates for sorghum are 5, 8, 13, or 16 inches of water during the growing season. The yield response curves generated along with soil moisture analysis will allow for a water balance to be calculated determining water use efficiency of each crop. Such that the optimum water requirement can be determined for each crop and the impact of limited water on relative yield can be evaluated.