

OPTIMIZING AGRONOMIC PRACTICES FOR CORN SILAGE

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ABSTRACT

Pioneer Hi-Bred researchers regularly conduct studies to determine the effects of crop management practices on corn silage yield and quality. After selecting the proper genetics for corn silage, maximizing silage quality and yield depend on optimizing plant population and row spacing, nitrogen fertility, irrigation management, planting date, harvest timing and cutting height. Narrow-row corn systems may increase corn silage yields about 7% above 30-inch rows with little impact on silage quality. Proper soil fertility can improve corn silage quality. As nitrogen availability increases, the crude protein (CP) content of harvested corn plants increases. The effect of early planting on yield and quality of corn for silage is dramatic, just as it is for corn grown for grain. Early planting also allows for early harvest potential. Growers can affect silage quality by correctly timing harvest and adjusting cutting height. Harvesting at the right time is needed for proper fermentation in the silo. As cutting height is increased, forage yield declines and quality increases due to the fact that lower quality, high NDF material is left in the field. Pioneer irrigated plant population studies conducted at LaSalle, Colorado found that: Silage yield increased with population density and was greatest at the highest density tested: 42,000 plants/acre. Silage fiber content increased with increased plant density; digestible fiber and whole plant digestibility decreased. Net energy and TDN were reduced with increased plant density; however, estimated milk/acre and beef/acre increased with greater plant density. University results (non-irrigated) have also shown that increasing plant population increases silage yield significantly and decreases quality slightly.

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