

Interactive Effect of Nitrogen Stress and Source/Sink Manipulation on Stem Sugar Content in Maize

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Abstract: *An experiment was conducted to study the effect of source/sink manipulation and nitrogen stress on stem sugar content in maize. Foundational check genotypes of maize belonging to extra early, early, medium and late maturity groups were subjected to source/ sink manipulation under control and nitrogen deficient conditions. Stem sugar content (at harvest) was significantly higher in plants grown under nitrogen deficient conditions. Same trend was observed in all the four genotypes studied. Stem sugar mobilization was highest when leaves situated above cob were defoliated. Plants with sink limitation (by restricted pollination) were defective in stem sugar mobilization. We also found significant positive correlation of stem TSS reading (measured at harvest) with total soluble sugars estimated using conventional method. Measuring stem TSS during harvest is an easy method to identify genotypes with better stem reserve mobilization.*