Nutrient Management of Semi-Arid, Short Season Corn in Direct-Seed Cropping Systems. (S04-bodley164227-Poster)

Authors:

- M.K.Bodley* - *Washington State University*
- G.J.Schwab - *Washington State University*
- W.L.Pan - *Washington State University*
- E.D.Harwood - *Washington State University*
- R.P.Bolton - *Washington State University*

Abstract:

Corn (Zea mays L.) is being evaluated as an alternative crop in direct-seed systems in eastern Washington. However, fertility management of direct-seed corn must be tailored to meet local climatic conditions with dominant winter precipitation and dry summers. This two-year study is being conducted to determine the optimal rate and timing of N applications to improve N use efficiency and to assess P, S and Zn requirements. The experiment is located in the 510-610 mm and 405-510 mm rainfall zones of eastern WA. Pioneer variety 39K72 was direct seeded into wheat stubble in May 2002. Four rates of N were applied, from 17 to 178 kg N/ha applied (1) all in the spring (2) 56 kg N/ ha applied in the fall and the balance applied in the spring. These plots received equal amounts of P, S, and Zn. Additional plots lacking P, S, or Zn were established. Soil and plant samples were taken throughout the season. Fall/spring split applications of fertilizer are designed to improve the distribution of N in the root zone and its subsequent availability during the growing season. Positionally available N is expected to increase yields and N use efficiency.

Corresponding Author Information:

Mary Bodley
Washington St. University
Dept. of Crop and Soil Sciences/ P.O. Box 646420,
Pullman, WA 99164-6420

phone: (509)335-7817
e-mail: mbodley@mail.wsu.edu

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