Sustainable Production of Alfalfa on Coastal Plain Soils. (C06-haby163027-Poster)

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Abstract:

Alfalfa production on Coastal Plain soils is limited due to infertile acid soils, pests, and humidity that precludes adequate alfalfa hay drying in spring. We conducted a series of small-plot and field-scale studies to determine adequate fertility requirements for alfalfa on Coastal Plain soils. Results indicate little need for N fertilization of alfalfa. Increasing the between-row spacing from 23 to 69 cm lowered dry matter yield (DMY) by 2.1 Mg/ha the seedling year. Alfalfa yielded 11 Mg/ha at all row spacings in a drought-affected third year. Applied P at 49 to 73 kg/ha maximized DMY on soils testing below 19 mg of P/kg by the pH 4.2 NH4OAc-EDTA extraction. After one season, plots not fertilized with potash contained no alfalfa. Applied Mg, S, Zn, Cu, and Mo had no significant effect on DMY. Increasing soil pH from 6.0 to 7.5 increased DMY more than 5 Mg/ha. Boron applied at 3.4 kg/ha increased DMY 3.9 Mg/ha. Average net return on properly selected field sites ranged from 548 to 830 dollars/ha over 2 yr. Successful and economic rain fed alfalfa production is possible on properly selected Coastal Plain soils.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 829

Keywords:

Alfalfa, Coastal Plain Soils