# Crop Sequence Comparisons of a Diverse Rotation in the Northern Plains. (A08-kolberg161636-Poster)

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## Abstract:

Proper sequencing of crops within dryland rotations can assist in efficient use of producer inputs and precipitation. A 4-yr rotation included crops with different growth habits - spring wheat (SW), proso millet (PM), field peas (FP) and safflower (SF). Three sequences of this rotation were compared in plant production and N uptake under no-till management from 1999 to 2001. Crop sequences were 1)SW-FP-PM-SF, 2)SW-PM-FP-SF, and 3)SW-PM-SF-FP. Comparing production and N uptake among rotations for each crop showed SW with a rotation by yr interaction for yield, and grain and straw N uptake. Higher yield and N uptake occurred in rotations 1 and 2 in years with average to high June rainfall ('99 and '01) while the same was true for rotation 3 during 2000, with lower than average June rainfall. Safflower was higher in total biomass and total N uptake in rotation 2. Field peas did not show differences in production or N uptake among rotations. Proso millet produced grain in 2000 only with high weed pressure from green foxtail in other years. Rotational comparisons of average annual production also showed a rotation by yr interaction in the order of 1>2>3 in 1999 and 2000 with near average rainfall and 2>1>3 in 2001 with much greater than average rainfall.

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## Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 429

## Keywords:

no-till management, northeast Montana, crop sequencing