



Dryland Grain Sorghum Water Use, Light Interception, and Growth Responses to Planting Geometry

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ABSTRACT

A good title identifies the subject and purpose of the study. Use common names of crops where possible, and avoid abbreviations. Length is 12 words or less.

Author(s).

Abstract < 250 words for papers and < 150 words for notes. Identify crops or organisms involved, soil type, chemicals, and other details important for using results. Do not cite figures, tables, or references.

Avoid equations.

Rationale

Crop yields are primarily water-limited under dryland production system in semiarid regions.

Objectives

This study was conducted to determine whether the growing season water balance could be manipulated through planting geometry.

Methods

The effects of row spacing, row direction, and plant population on the water use, light interception, and growth on grain sorghum [*Sorghum bicolor* (L.) Moench] were investigated at Bushland, TX on a Pullman clay loam (fine, mixed, thermic Torertic Paleustoll).

Results

In 1983, which was a dry growing season, narrow-row spacing and higher population increased seasonal evapotranspiration (ET) by 7 and 9%, respectively, and shifted the partitioning of ET to the vegetative period. Medium population crops yielded 6.2 and 2.3 Mg/ha of dry matter and grain, respectively. High population resulted in high dry matter (6.1 Mg/ha) and low grain yield (1.6 Mg/ha), whereas low population resulted in low dry matter (5.4 Mg/ha) and high grain yield (2.3 Mg/ha). Row direction did not affect water use or yield. In 1984, dry matter production for a given amount of ET and light interception was higher in the narrow-row crops. Evapotranspiration was less for a given amount of light interception in the narrow-row crops and in the north-south row crops.

Conclusions

Narrow-row planting geometry appears to increase the partitioning of ET to the transpiration component and may improve the efficiency of dryland cropping systems.

Reasons for conducting this research

Goal to be obtained.

Procedures to be used.

Major findings of your experiments.

Relevant usefulness of your studies.

period .
comma ,
semicolon ;

Narrow-row planting geometry increases ET.

Narrow-row planting geometry increases ET, but can reduce yields. High populations increased dry matter; lower evapotranspiration was also noted.

colon :

The Planting dates were as follows: September 29 at Mead; October 10 at Lincoln.

parenthesis ()

Narrow-row planting geometry increased partitioning of ET. (It also increased water use efficiency.)

etc.

Row direction, water use, ET, light interception, etc., all affected final grain yield.

e.g.

Narrow-row spacing also affected other parameters, e.g., plant population.

i.e.

Water use and light interception; i.e., canopy radiation capture, were correlated.

et al.

Smith et al. (2006) or (Smith et al., 2006)

Use to denote a full stop at the end of a statement.

To indicate a break or pause, use a comma.

Used to link within a sentence two independent clauses.

Use to introduce an ensuing list.

Used to clarify meaning and add additional information. There must be two.

Indicates that the listed items are not the complete list.

abbr. Latin *exempli gratia* (for example).

abbr. Latin *id est* (that is).

abbr. Latin *et alii* (and others).

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