2007

Seeding Rate for Flax, 2005–2006

Mary H. Wiedenhoeft
Iowa State University

Sarah Carlson
Iowa State University

David Haden
Iowa State University

Margaret A. Smith
Iowa State University, mrgsmith@iastate.edu

Seeding Rate for Flax, 2005–2006

Abstract
Demand for certified organic flax has increased due to a rise in human consumption of food products rich in omega-3 oil and due to the recent construction of a certified organic oilseed expelling facility in Cherokee, IA.Challenges exist to raising organic flax in the upper Midwest, including a lack of region-specific production guidelines, adequate weed management strategies, and seed availability. Contract requirements stipulate specific flax cultivars to be grown, but seed for these is not available locally. Seed shipped from Canada can be expensive,so accurate seeding rate recommendations are needed. Seeding rates may need to be increased for organic production over those suggested for conventional production to aid in weed suppression. In 2005 and 2006, ranges of seeding rates were evaluated to assess the effect on flax grain yield and oil quantity.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences

Seeding Rate for Flax, 2005–2006

Mary Wiedenhoeft, associate professor
Sarah Carlson, assistant scientist
Department of Agronomy
David Haden, farm superintendent
Margaret Smith, extension program specialist

Introduction

Demand for certified organic flax has increased due to a rise in human consumption of food products rich in omega-3 oil and due to the recent construction of a certified organic oilseed expelling facility in Cherokee, IA. Challenges exist to raising organic flax in the upper Midwest, including a lack of region-specific production guidelines, adequate weed management strategies, and seed availability. Contract requirements stipulate specific flax cultivars to be grown, but seed for these is not available locally. Seed shipped from Canada can be expensive, so accurate seeding rate recommendations are needed. Seeding rates may need to be increased for organic production over those suggested for conventional production to aid in weed suppression. In 2005 and 2006, ranges of seeding rates were evaluated to assess the effect on flax grain yield and oil quantity.

Material and Methods

Flax (cultivar, Norlin) was planted at 25, 50, and 75 lb/acre on April 8, 2005 and April 11, 2006. Seed was drilled with a Massey Ferguson 8-ft wide end-wheel drill with single-disk openers and 7-in. row spacings. No underseeding or herbicide was used for weed management. Flax was harvested when plots contained 95% dark brown bolls. All plants were cut at ground level in four, 1-ft^2 quadrats/plot. Harvest dates were July 28, 2005 and July 20, 2006. Flax plants were air-dried, grain was hand threshed, weighed, and grain moisture measured. Grain yields were adjusted to 8% moisture. Flax oil percentage was estimated using nuclear magnetic resonance and was expressed at 8% moisture. All data were analyzed with the GLM model of SAS.

Results and Discussion

Results for flax grain yield are reported for 2005 and 2006. Data for oil quantity and quality are only currently available for 2005. Flax grain yields did not differ by year and averaged 1,351 lb/acre clean seed over the two years of the study. Grain yield was not affected by planting rate within the range of 25 lb/acre to 75 lb/acre (Figure 1).

Flax oil content measured in 2005 also was not affected by seeding rate. Percent oil of the total seed weight averaged 36.3% at 8% moisture.

Although no response to seeding rate was observed, with this limited database, a 50 lb/acre seeding rate is still recommended to insure an adequate plant stand. The effect of seeding rates on weed pressure needs to be evaluated, especially for organic systems.

Acknowledgments

Appreciation is extended to Ryan Rusk, field lab tech, for his assistance with this study. Funding was provided by the ISU Agronomy Endowment.

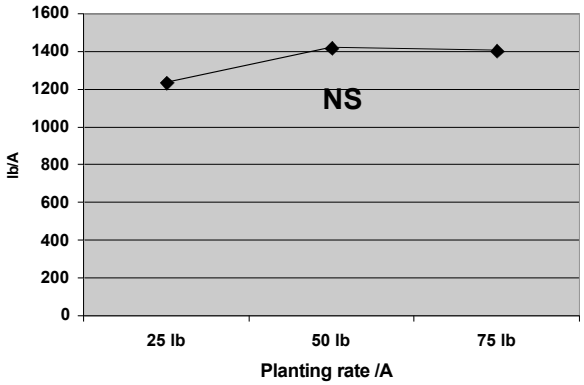

Figure 1. Seeding rate effect on flax grain yield in Northwest IA, 2005 and 2006.