

Evaluating the suitability of spring canola in an alternative cropping system in Iowa

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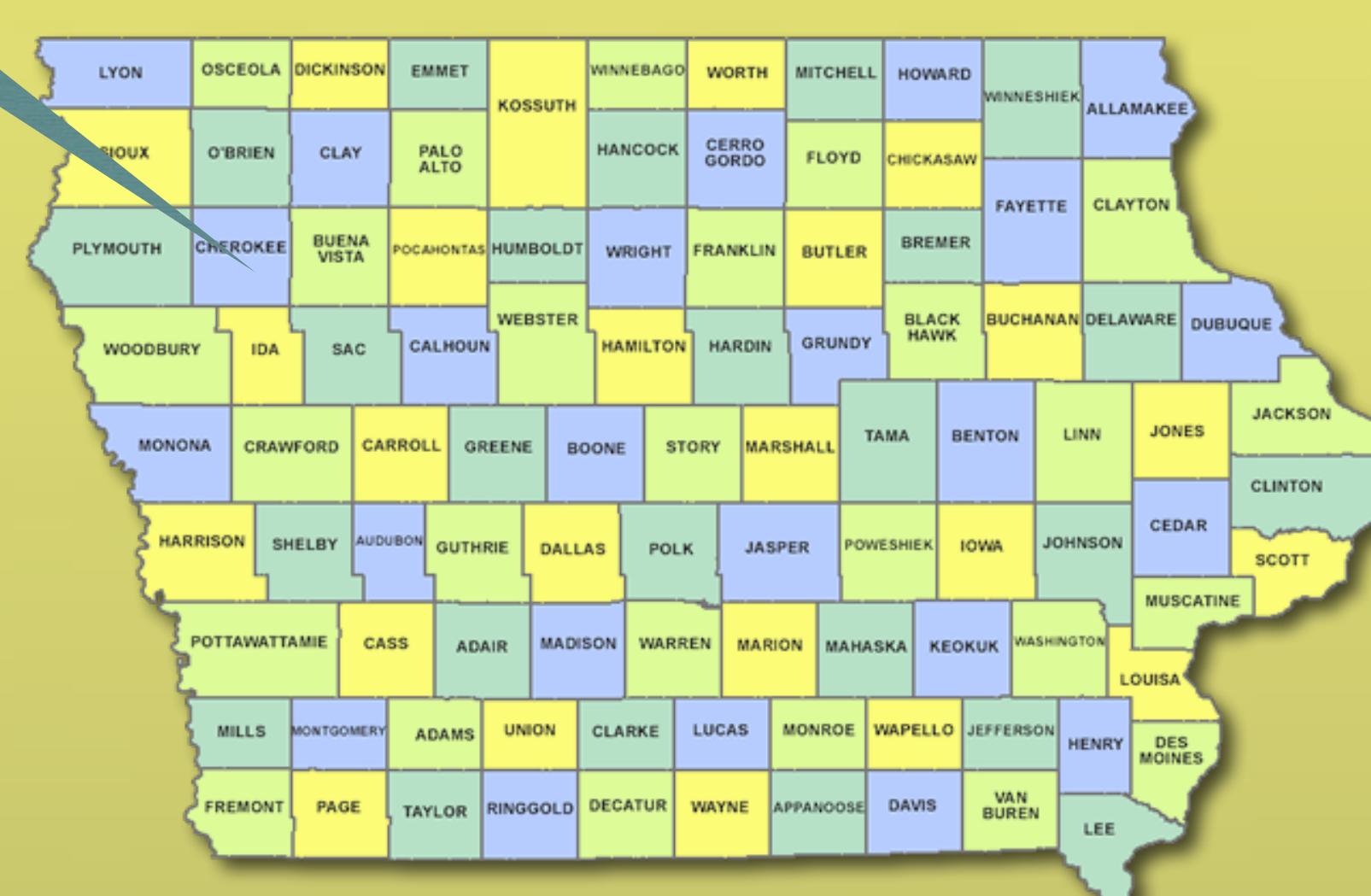
Objectives

Evaluate two possible management systems for spring canola in Iowa.

Why Iowa?

Canola oil processor in NW Iowa established a viable market in the state.

Recent interest in the potential ecological and economical benefits of crop diversity and alternative crop rotations has generated an opportunity for research in the state.



Methods

Sole crop spring canola and spring canola interseeded with red clover were evaluated for grain yield, oil yield, and ground cover.

Sole crop soybean, the most commonly grown oilseed and legume species in Iowa, was included for a comparison.

Proportion of intercepted photosynthetically active radiation (IPAR) is linked to percent ground cover. Increased ground cover during the year can reduce soil wind and water erosion and possibly disrupt crop pest life cycles.

Soybean



Canola



Canola/
red clover

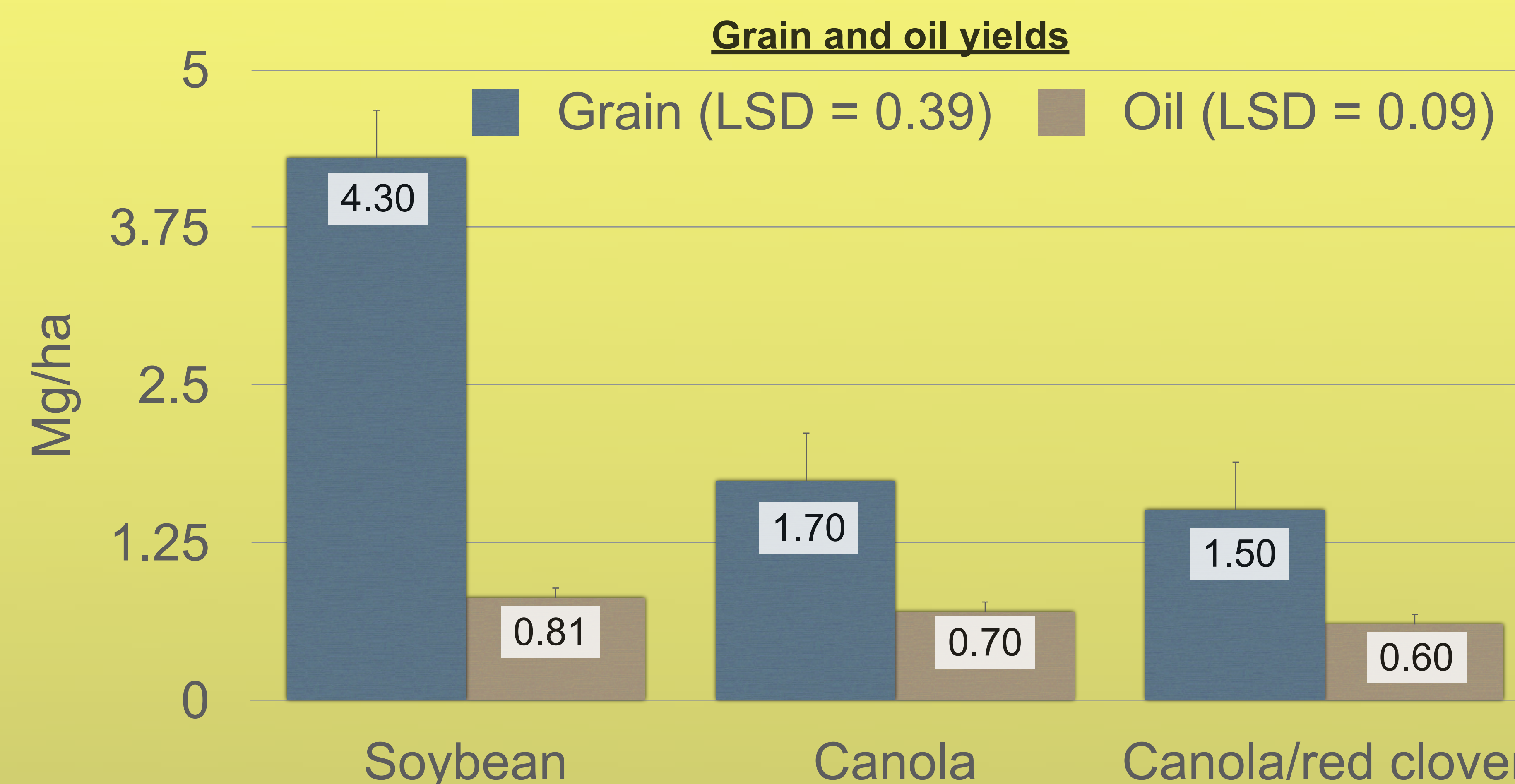


Late May

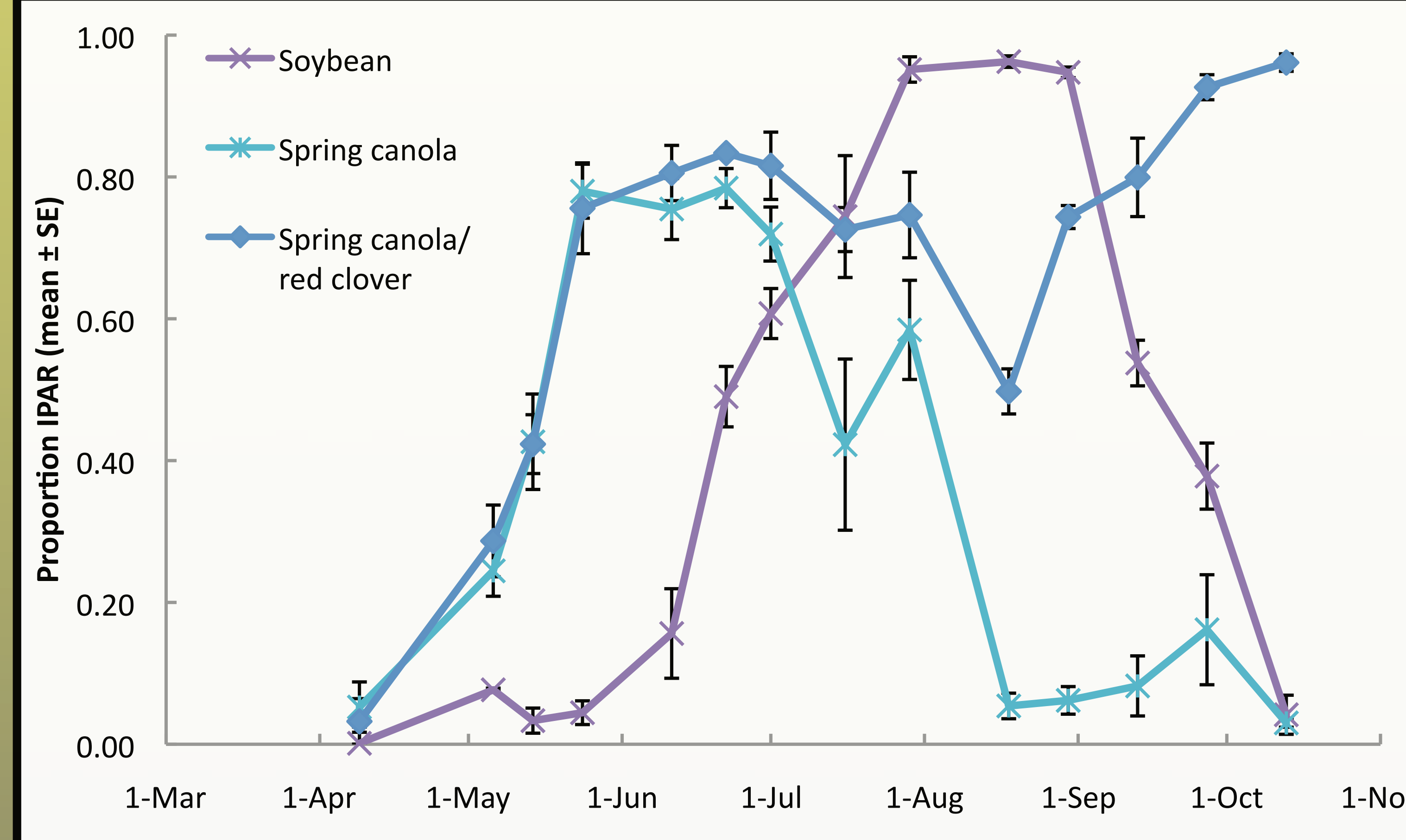
Mid June

Mid July

Mid October



Proportion of IPAR over the duration of the year



Red clover growing beneath canola canopy



According to ISU Agronomy Extension, a healthy stand of red clover can provide up to 160 kg N/ha for the succeeding crop in rotation compared to 57 kg N/ha from soybean.

First-year Results

- » Soybean yielded more grain and oil than sole crop canola and canola/red clover.
- » Sole crop canola yielded more grain and oil than canola/red clover.
- » Interseeding spring canola with red clover increased the duration of proportion of IPAR.
- » Reduced yields relative to soybean and sole crop canola may be compensated for in the following spring by a greater N-credit from interseeded red clover.



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ASA-CSSA-SSSA
Annual Meetings
US Canola Association
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