

Interaction of Foliar Fertilizer and Fungicide on Soybeans at R1-R3

Bruce SCIA Major Grant

Purpose:

To determine yield response and interaction of foliar fertilizer and fungicide on soybeans when applied at the R1-R3 stage.

Background:

This trial is the second year of attempting to replicate results from similar trials in the Chatham-Kent area using MKP (foliar greenhouse fertilizer) and Headline fungicide. Measurable economic response was observed when applied at the appropriate time and followed by rainfall. Suggested protocols were obtained from Richard Anderson of BASF, involved with the Chatham-Kent project.

Methods:

KP Plus was applied at the rate of 1 KG/ac on soybeans at the R2 plant stage. Additionally, KP Plus + Headline EC Fungicide was applied in the same field. Untreated check plots were included in the same field. The treatments were replicated at each site to ensure yield data is statistically significant.

Figure 1. Plot Layout

Check	KP Plus	Check	KP Plus + Fung.	Check	KP Plus	Check	KP Plus + Fung.	Check
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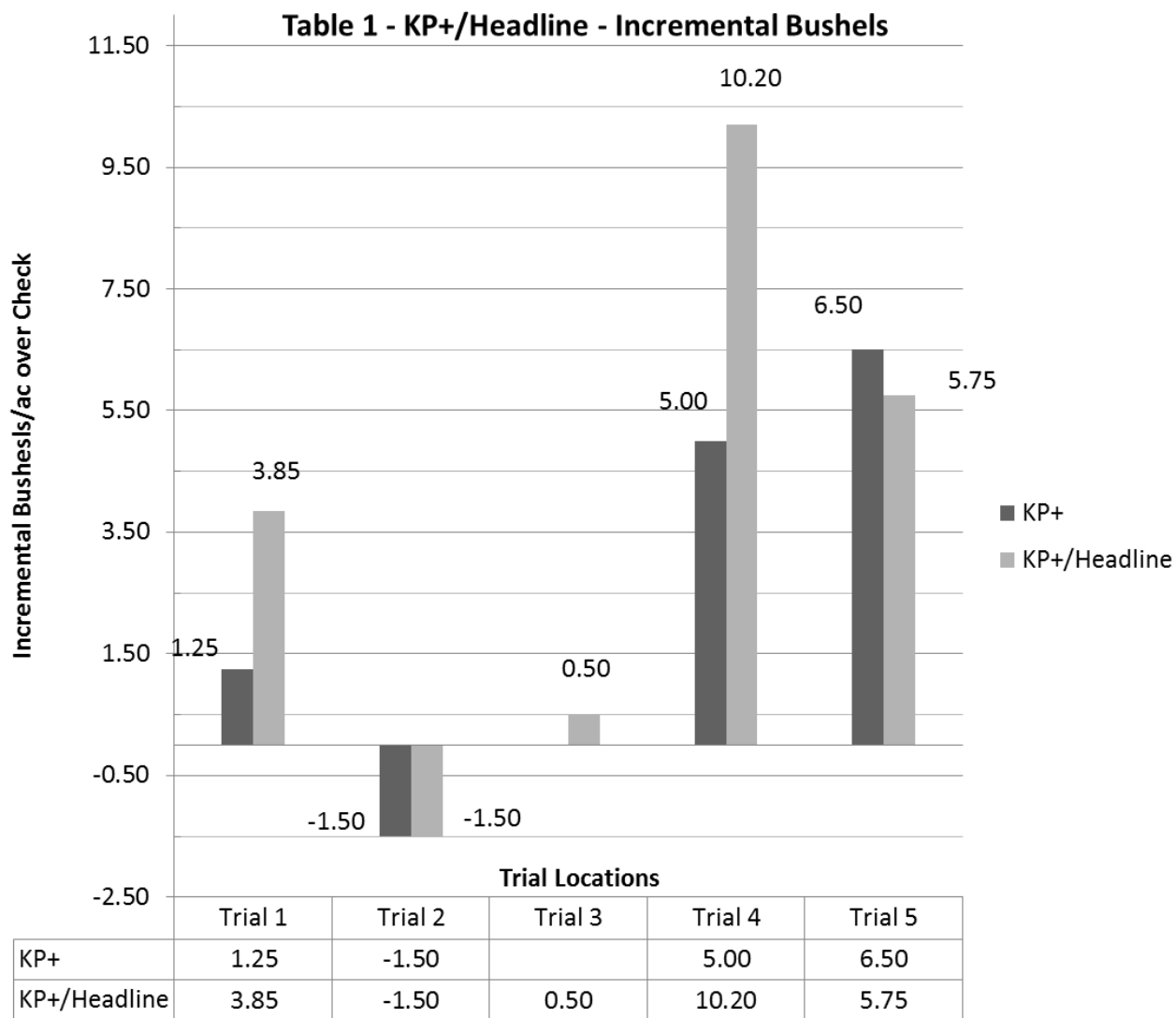
Treatments:

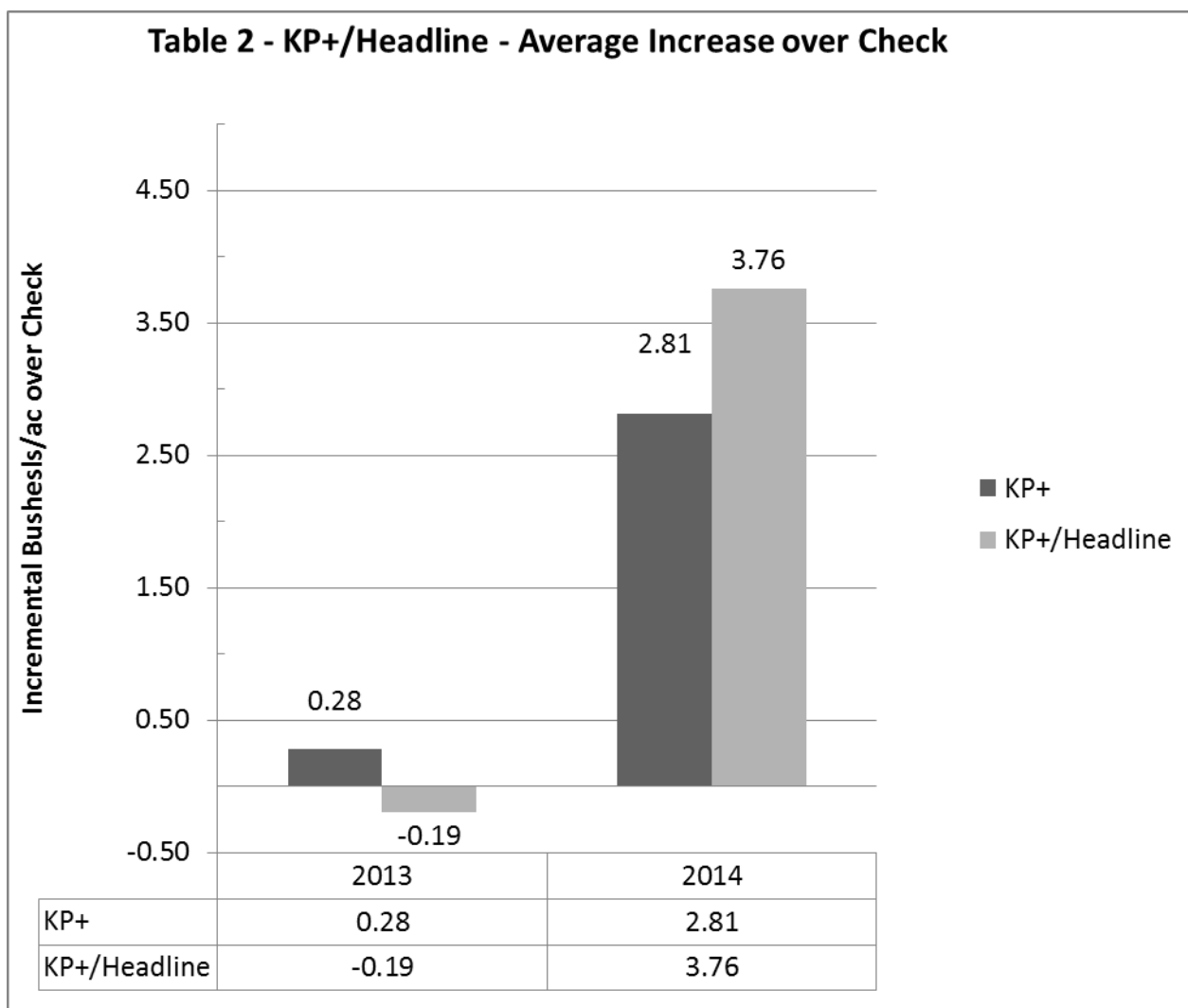
Check, 1 kg/ac of KP Plus (1-51-33) 1 kg/ac of KP Plus (1-51-33) + 160 mL/ac of Headline EC Fungicide

Results:

The 2014 harvest season resulted in non-replicated plot data and inconsistent sample size. Using simple analysis at the 4 sites, we did see trending results, with the KP+ and KP+/Headline treatments out yielding checks. Fields with soil test levels greater than P: 16 and K: 160 showed the greatest response to an application of KP+ or KP+Headline. Relative to the check, 1 site showed a negative response to KP+ and KP+Headline, this site did have sprayer tracks in the treated areas. At the time of this report we were able to obtain 2014 data for 5 of the 6 trials.

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KP+

In 75% of trials the 2014 results provided a 3.2 bu/ac positive response. Overall the KP+ treatment averaged 2.81 bu/ac. In 2013, KP+ alone provided the largest average positive response, yielding 1.33 bu/ac 66% of the time.

KP+/Headline

80% of the 2014 treatments had a positive response of 4.1 bu/ac. Including trials that were non-responsive, the KP+Headline treatment averaged 3.8 bu/ac. These are similar to other trial results in the province. In 2013, the tank mix provided an average positive response of 0.65 bu/ac 50% of the time, atypical of other Ontario trials.

2014 Growing Conditions

Weather conditions for most of the season were below average heat units and above average rainfall, with most days during the July/August timeframe below 30 degrees.

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Weather conditions after application included cloudy days and heavy dews. Harvest was delayed due to poor weather conditions.

2013 Growing Conditions

During application timing, the area was experiencing dry weather conditions and a normal harvest. Weather conditions for most of the season were average heat units and above average rainfall.

Summary:

BSCIA trial findings support that fungicide applications can be a useful tool. Weather conditions and soil type play a bigger factor in soybean yields than foliar amendments. Soybeans grown under high yield environments and damp weather conditions are the most likely to show a response. Applications of a fungicide or fungicide with a foliar fertilizer should be applied with this in mind. Over the two year period, KP+/Headline provided the greatest response.

Next Steps:

This was the final year of a two year project.

Acknowledgements:

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