WEST MIDLANDS GROUP
our knowledge hub

Improving timely emergence of crops using seed delivery systems

GRDC Project Code: 9176016

Location: Moora

Aim

The aim of this study is to investigate the impact of paired and single seeding configurations on the timely emergence of crops.

Background

Grain growers are now able to choose from multiple seeding delivery systems, including single row and paired row seeding boots that are used to place seed and fertilizer in the soil. While the use of paired row seeding configurations has been popular and well adopted among growers in recent years, there is little independent data to quantify the benefit of paired row seeding configurations on the timely emergence of crops over a range of seeding depths and soil types.

Methodology

This trial was completed in the 2018 seeding season with the use of an Ausplow DBS seeder at each site location. Some of the seeding rows on the bar were changed to give a mix of single and paired row seeding configurations as well as deep and shallow seeding depth at one of the trial sites. Each site was sown dry due to the late break to the season, and plant establishment was measured 14 days following the break. During the first 14 day period prior to plant count there was a large amount of wind erosion increasing the depth that the seed was sown in in the sandy soil trials.

Results

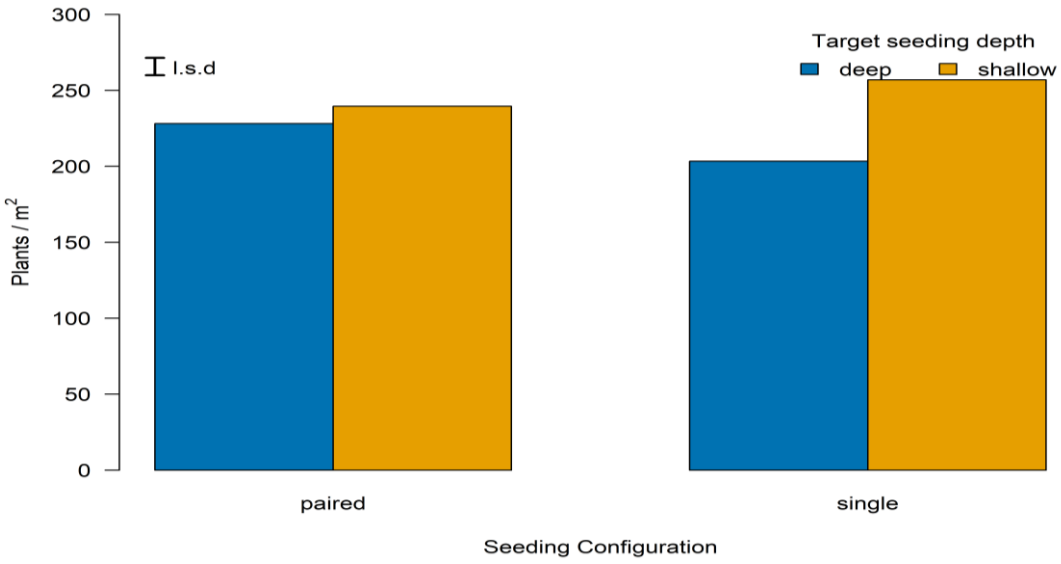

Figure 1: Comparison between sowing the seed deep versus shallow and the effects this has on initial crop establishment.

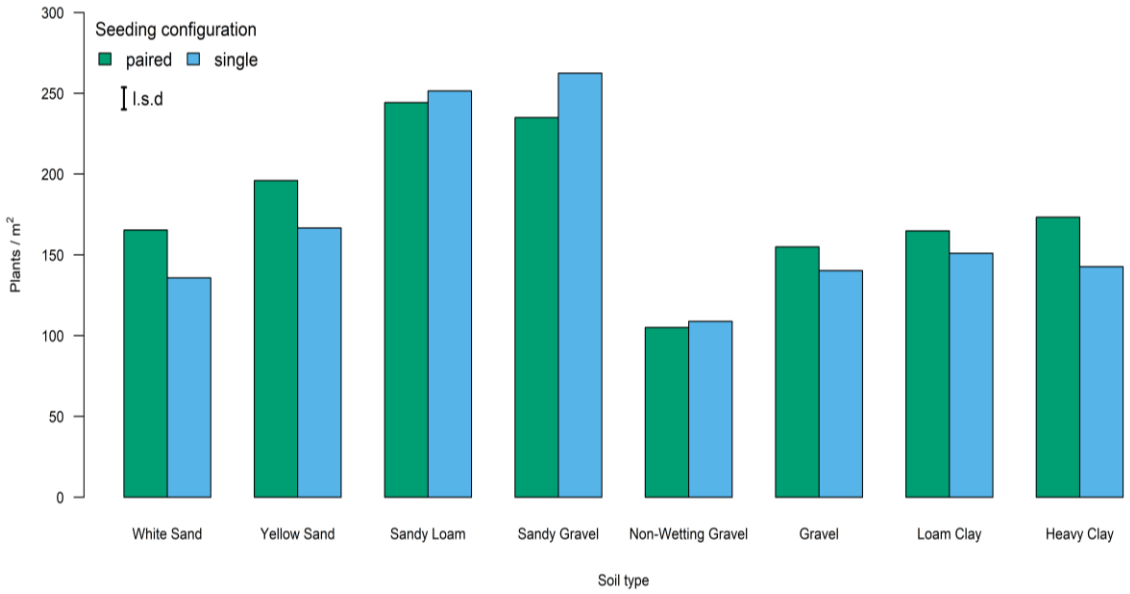

Figure 2: Comparison between using the single row and paired row seeding method in multiple soil types 14 days after the break of the season.

Observations

Preliminary findings are showing that there is a significant amount of difference with the depth of sowing to the initial crop establishment after the 14 day period after the first break (**Figure 1**). Recorded results showed that plants sown at a shallow seeding depth (10-15mm) established in a faster time frame and an increase in number of plants/m^2 when in comparison to those that were sown deep (20-30mm). This can be seen in both the single and paired rowed seeding methods.

Comparisons between the single and paired row seeding methods identified that the paired row seeding method increases the plant establishment at 14 days after the break in most soil types tested in 2018 (Figure 2). However, there was no significant difference seen at all sites when a growth stage 31 biomass test was conducted.

This project will continue in 2019 where it is hoped that more soil types in different areas of the West Midlands Region will be covered.