

## MAIZE - WHEN DO YOU DRILL?

The Pearce Seeds Trial's team will be gearing up for maize drilling in mid-April as the window for the early drilling trial to further examine the effects of drilling date on maize yields fast approaches. There has always been some contention as to when the safest early drilling date is for maize with often an arbitrary calendar date of 15 April being thrown around, other areas of the industry maintaining that as soon as soil temperatures reach 10 degrees and rising, whilst others suggest 8 degrees for 5 consecutive days. The theories on when to drill maize are almost boundless.

Pearce Seeds have endeavoured to put some statistical information beside the theories. Rather than undertaking farm observation or demonstration trials, fully replicated plots which are required to give statistical relevance to the results, were utilised at their trials farm at Plumber, near Sturminster Newton in Dorset. Two different drilling dates were selected, an early drilling window, and a later more conventional drilling date. The early drilling plots were sown on 16 April 2014 when soil temperatures were at 14<sup>0</sup>C and night time soil temperatures were 8<sup>0</sup>C. The later drilled plots were sown on 6 May 2014 just 20 days later. Soil temperatures were then 16<sup>0</sup>C with night time soil temperatures remaining over 9<sup>0</sup>C. The trial was conducted using the same five varieties in both data sets, and these ranged from Maturity Class 6, through to Maturity Class 11.

Initially the trial plots were assessed for seedling retention when the maize plants reached 4 leaves. An interesting observation was that the later drilled plots had maintained 100% of the initial drilling rate of 47,000 plants per acre. These were then artificially reduced to 42,500 plants per acre, as is normal practice within a maize trial to maintain a set population to assess a variety.

The early drilled plots however had a 17% seedling loss from drilling to the 4 leaf stage, with the plant count down to 37,000 plants per acre.

The early drilled plots were harvested on 20 September 2014, with the later drilled plots being harvest 15 days later on 10 October 2014. Therefore the later drilled plots actually had a 5 day less growing days.

Despite this shorter growing season, last year's results saw a 50% increase in dry matter (DM) from the later drilled crops. The average yield across the later drilled varieties was 22.63t/ha DM whereas the early drilled varieties was 15.18t/ha.

The greatest improvement from the later drilling date of all the varieties tested was a 60% increase in DM. All varieties tested had an increase in DM from the delayed drilling date with the variety showing the least level of yield improvement still increasing yields by over 5t of DM/ha to its early drilled counterpart.

Similar results were seen on starch yields, with the later drilled plots averaging 57% more starch per ha, which represented another 3.35t/ha of starch

This additional 7t/ha of DM and 3.35t/ha of starch came from delaying drilling by 20 days, until soil temperatures were rising and in particular the night time/minimum soil temperatures.

These sentiments were echoed by Pearce Seeds Agronomist Giles Simpson who provides the agronomy for the maize trials “The key is waiting until soil temperatures are on the rise. It is not unusual for late frosts in April or heavy rains which will drop the soil temperature, we are repeating the trial again this year, but it would appear that a minimum soil temperature of 10<sup>0</sup>C, and rising appears to assist the crop in getting away.”