



PROCAM
AGRONOMY THAT DELIVERS™

Technical Update
March '18

MARCH MONITOR

A delayed start to spring will put the focus on stimulating and developing plant root and shoot growth to ensure crop yield potential is optimised.



1st March is the meteorological start of spring and usually signals the start of increased crop growth as temperatures rise and daylight hours increase. The unseasonal cold snap this year has put spring on hold and delayed any progress with fieldwork. Although autumn sown cereal crops established well, on the whole the trend for later sowing to combat grass weeds means that many are not as well developed as they might be in early March. Also, most areas of the UK have encountered wetter conditions over winter which will have restricted root growth in a number of crops. The weather may also delay drilling of spring crops. With a shorter growing season the need to get crops established with effective and viable root development will be an even higher priority. In short, both winter and spring crops will need more care and attention to ensure yield potential is not lost at this early point in the season. The use of plant biostimulants, either alone or in combination with nutrients, has been proven in scientific studies to improve crop production and reduce abiotic stress on crop plants.

A plant biostimulant is defined as a product which contains material and/or microorganisms whose function, when applied to plants or the soil, stimulates natural processes to improve nutrient uptake, nutrient use efficiency and tolerance to stress, independently of its nutrient content.

ProCam's own trials under both controlled environment and field conditions have clearly demonstrated the potential of these products to improve yields in winter wheat, spring barley, maize and sugar beet. As an example, work on spring barley at Nottingham University identified products that gave significantly increased root and shoot growth when applied at the 4 leaf stage to spring barley as shown in the pictures below. The improvement in shoot growth was seen in terms of both increased tiller production and survival. As a 'sink limited' crop, high ear numbers are the key to improving spring barley yields.



Untreated



+ Biostimulant

These products have proven themselves in practical use on farm over recent seasons. The yield map below, from a field of winter barley in 2017, shows the dark blue area yielding 0.6 t/ha more where 2 applications of a biostimulant/nutrient treatment were applied at T1 and T2. All other treatments across the field were the same. This example shows around a 5:1 return on input cost. Make sure that you take full advantage of all the available options to get your crops into the best possible condition to optimise crop growth, yields and quality in 2018.



WINTER WHEAT

EARLY FUNGICIDE STRATEGY 2018



Following the cold start to March there may be some concerns about fungicide choice and timing in cereals as growth stage (GS) 30, the typical 'T0' timing, approaches. In the late autumn and early winter yellow rust, mildew and septoria were easily found. A few sharp frosts will have limited disease development, and in the case of mildew and yellow rust, often removing infected leaf tissue. However, sources of inoculum will still survive within plant tissue and disease symptoms will quickly return as temperatures increase.



Septoria, Revelation Feb '18



Yellow rust Lili Feb '18

Septoria inoculum will survive on crop debris as well as living tissue. The majority of wheat varieties are susceptible to yellow rust in the seedling stages, even where they have good adult plant resistance. With the continually evolving nature of yellow rust races, early intervention with fungicide is essential to be confident of suppressing future rust development.

Planning fungicide programmes must include a high degree of risk assessment. The UK climate is inherently variable and unreliable. Most of our current portfolio of fungicides need to be applied preventatively, especially with regard to the septoria diseases, in order to protect against future disease development.

Starting with a robust T0 fungicide provides an opportunity to suppress disease at the outset. Although the main yield producing leaves may not be present at this time a T0 fungicide application allows the creation of a 'firewall' to help protect the later emerging leaf canopy. It also takes some of the pressure off the T1 timing, allowing a level of flexibility if weather delays application. ProCam trials in recent years have demonstrated yield losses over 0.5 t/ha where a T0 fungicide was omitted, compared with programmes starting with a robust triazole/chlorothalonil fungicide at GS 30.

Any economic loss is always likely to be greater and have a bigger impact from the underuse of fungicides in more disease sensitive varieties and high risk seasons than overuse in lower risk scenarios. Your ProCam Agronomist will have details of all the available options to guide you on the appropriate T0 options tailored to your individual crops and varieties.

CROP NUTRITION

SPRING 2018



As crops emerge from the late blast of winter a priority will be to assess their nutritional requirements. In addition to the key applications of Nitrogen (N), Sulphur (S) should feature strongly in current nutrient programmes. S is very mobile in the soil and following wetter conditions levels could be depleted. It has been suggested that in any case cereal crops should receive 10-15 kg/ha S with the first dose of N or at least by GS32. As the cold retreats many crops may be showing Manganese (Mn) deficiency. Any lack of Mn is likely to be exacerbated by low temperatures. Research work has shown that latent or hidden deficiencies of Mn can impact on various elements of crop growth, including reduced root and shoot development and leaf wax formation. This latter feature can make the plants more susceptible to disease e.g. mildew. These effects can occur despite the absence of any visual symptoms of Mn deficiency. Soils low in Mn are typically often low in other key nutrients such as Zinc (Zn) or Copper (Cu). Magnesium (Mg) can also be limiting in early spring if soil conditions make it unavailable to plant roots. An early application of Mn in combination with the other key nutrients - Mg, Zn & Cu is worth considering to avoid any 'hidden hunger' and ensure your crops get going as quickly as possible this spring.

OILSEED RAPE

PGRS SPRING 2018



Oilseed rape crops generally established well last autumn and despite being cut back latterly by frosts (and pigeons) will make rapid growth as growing conditions improve. The use of the plant growth regulator Toprex in recent seasons has been shown to have positive effects on oilseed rape performance over and above any effect in shortening the plants. Toprex critically impacts on the canopy structure, evening side branching and encouraging a more compact, synchronous flowering period. This allows more light to reach the leaves. Light interception post mid-flowering contributes to 90% of oilseed rape yield. Creating a more uniform crop also aids decisions on desiccation timing and harvest. In addition Toprex, based on triazole fungicides, provides valid and effective light leaf spot suppression. Stem extension is the optimum timing for the best PGR and disease benefits from Toprex. Timing does need to be appropriate to crop size and growth. Smaller crops will benefit more when Toprex is applied later at green bud, evening flowering and allowing the crop to reach its maximum canopy potential.