



PROCAM
AGRONOMY THAT DELIVERS™

Technical Update
May '21

MAY MONITOR

Challenging weather conditions in April have caused difficulties with crop management. In May the focus is on key timings for cereal and oilseed rape crops.



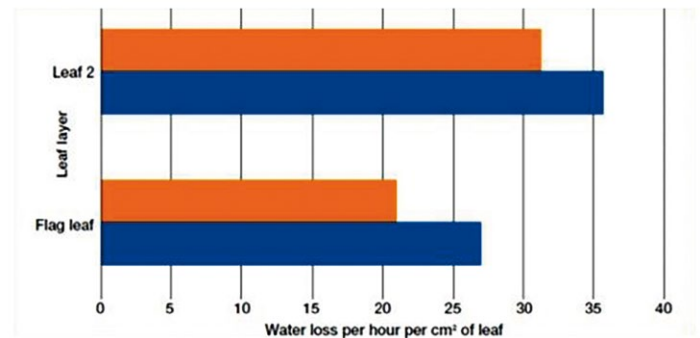
Dry conditions for most of April, combined with wide diurnal temperature ranges, have put cereal crops under great stress and caused difficulties with planning and applying inputs around the 'T1' timing. The dry conditions diminished the 'wet weather' diseases such as septoria and even the yellow rust was suppressed by the night frosts. As ever though, more unsettled conditions towards the end of the month quickly raised the disease threat and highlighted the dangers of over-economising fungicide protection in such a fickle and variable climate as the UK's.

Moving into May the focus now switches to planning for the 'T2' timing, around flag leaf emergence. The T1 fungicides applied from late April into early May should suppress current disease levels and provide appropriate and adequate protection to the emerging leaf 3. However, the 'T2' timing at flag leaf emerged fungicide is still the most important timing for yield formation.

The T2 fungicides protect the flag leaf — the main yield producing component of the wheat plant — along with topping up the cover on leaves 2 and 3. A robust level of protection needs to be maintained into and through the grain filling period from flowering (anthesis) onwards for optimum photosynthetic efficiency. There is a clear case for using the most effective chemistry available, especially where disease pressure is high but, even under lower disease threat the SDHI and strobilurin fungicides have major benefits to crop physiology.

SDHIs and strobilurins, in addition to their obvious disease-suppressing properties, have been shown to improve retention of green leaf area, reduce crop stress, lower leaf canopy temperature and enhance the plant's ability to extract water from deeper in the soil profile. These all have a direct impact on crop performance independent of disease control.

Studies at Warwick University in 2020 have confirmed improvements in water use efficiency, demonstrating a reduction in water loss from plants treated with an SDHI fungicide compared with an untreated control.



Yield responses to fungicide inputs will vary from 1-4 t/ha depending to a large extent on the disease resistance ratings of the variety and, of course, the weather. The yield increase from fungicide application is not related to the inherent yield potential of the crop. So, whether the yield potential is 7 or 10 t/ha, the additional 1-4 t/ha gained, especially at current wheat prices, will give a very positive return on typical fungicide input costs. Tailor fungicide programmes to the variety and disease risk but make sure they are not yield limiting. The unpredictability of the UK climate means that there is no room for complacency or false economy at the T2 timing.

Using a mix of active ingredients at T2 is essential to slow the development of resistance to key fungicide groups. Multisite inhibitors such as folpet are one of the options to be considered, especially in more unsettled weather conditions.

WINTER WHEAT

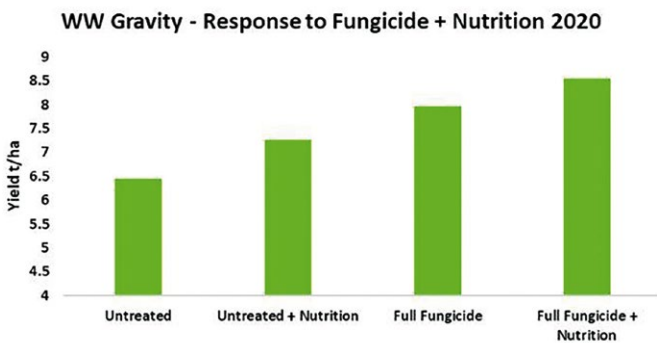
NUTRITION
SPRING 2021



Maintaining a healthy and efficient canopy in cereal crops relies on fungicides to suppress disease and an adequate supply of macro and micro nutrients throughout the season. The dry and cold conditions in April have caused many crops to show significant 'stress' symptoms.

Nitrogen (N), potassium (K) and magnesium (Mg) are particularly important to maintain a healthy, green canopy. K is essential for regulating the water supply in plants and a deficiency can reduce the plant's ability to quickly respond to changes in water availability, making it more susceptible to water stress. As a central component of chlorophyll, Mg is particularly important in maintaining a healthy and efficient green leaf canopy. Sulphur is another macro-nutrient that is vital to ensure efficient utilisation of nitrogen. It is a major component of proteins and an essential input for milling quality varieties.

ProCam's trials in recent years, including 2020, have demonstrated yield benefits from including foliar nutrients with fungicides over and above those achieved from fungicides alone. An example is shown in the graph below.



Additional yield increases of up to 2 t/ha were achieved when nutrients and biostimulants were included with fungicides, particularly at the T2 and T3 timings. Ensuring plants are healthy and well supplied with the correct balance of nutrients appears to make the fungicide programme more effective.

A tissue test ahead of the T2 timing will allow you to determine what, if any, nutrients are lacking and provide the basis for a tailored nutrient input to help your crops maintain optimum photosynthetic efficiency during the critical grain fill period. Your ProCam agronomist will have full details of the appropriate sampling and analytical services.

OILSEED RAPE

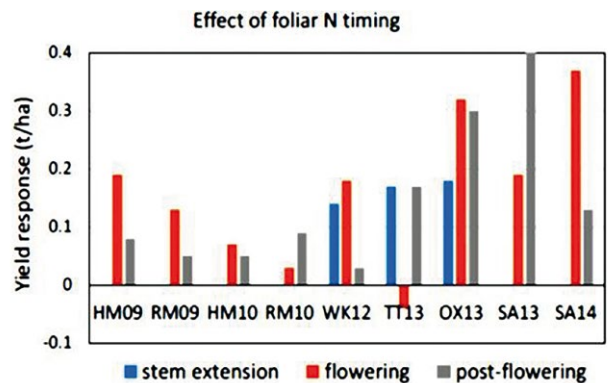
LATE FOLIAR N
2021



Dry conditions through much of April, could mean that N uptake by crops may be sub-optimal. In oilseed rape, late foliar N can help compensate for poor uptake of earlier applied 'bag' N. Applying foliar nitrogen during and post flowering keeps the crop green for longer. This maintains an efficient green leaf and pod canopy to sustain photosynthesis and produce carbohydrates during the important seed fill stage.

A UK-wide project carried out by ADAS and Yara in 2015 demonstrated that an average yield response of 0.3 t/ha was obtained following applications of 40-50 kg/ha of foliar N from a total of 26 experiments. The response was variable across all the trials but yield increases up to 0.78 t/ha were achieved. Larger yield responses to foliar N tended to follow sub-optimal soil-applied N, or when N uptake was compromised.

Yield responses were similar when applications were made between mid-flowering and up to two weeks after the end of flowering, illustrated in the graph below. This indicates that foliar N can be applied with Sclerotinia fungicides, assuming selected products are compatible with foliar fertilisers. The uptake efficiency of foliar N is generally high at 70-100%. However, applications of foliar N under high temperatures (>19°C) have been shown to be less effective and should be avoided.



The cost benefits of using foliar N in oilseed rape obviously depend on the cost of the total application and the potential value of the harvested crop. At current and projected crop values, relatively small increases in yield would be needed to cover the foliar N input and optimise oilseed rape returns.

As well as N, the flowering and early post-flowering timing is an important point to check that other nutrients e.g. magnesium are not limiting the oilseed rape crop's yield potential.