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Technical Update
Feb '19

FEBRUARY FOCUS

As spring beckons the priority will be to plan early season husbandry to get crops off to the best possible start.

For many the first agronomic crop input in 2019 will be fertiliser, especially nitrogen (N). Proposals outlined in Defra's recently published 'Clean Air Strategy' will require agriculture to ensure even more accuracy and efficiency with fertiliser and manure applications.

Technically the closed period for the application of manufactured N to arable crops under NVZ rules ended on the 15th January. Crops have had no urgent need for N where soil temperatures have remained below 5-6°C but as days lengthen and soils warm, crops' nutritional demands increase rapidly. N applications, as ever, will be the initial driver for growth.

Under NVZ rules remember that the quantity of N to be applied must be planned on a field by field basis before applications start. The plan needs to show that you have:

- Calculated the amount of nitrogen in the soil available for uptake by the crop during the growing season (the soil nitrogen supply)
- Calculated the optimum amount of nitrogen that should be applied to the crop, taking account of the soil nitrogen supply (the crop nitrogen requirement)
- Calculated the amount of nitrogen, from any planned applications of organic manure, (the crop available nitrogen) and finally
- Calculated the amount of manufactured fertiliser required

Before applying either organic manure or manufactured N a field inspection is required to assess the risk of run-off into surface water. Obviously, the risk is increased on sloping ground and where fields are close to rivers, streams and water-carrying ditches. Although frosts can allow access to land when soils are wet, N must not be applied when soils have been frozen for more than 12 hours in the previous 24 or when snow covered. Normal common sense should also meet the requirements not to apply N to waterlogged or flooded ground. Applications on a frost that thaws during the day are permitted. Remember also that records of fertiliser applications must be kept for at least 5 years. Your ProCam agronomist will have details of the NVZ rules and will also be able to advise on and help prepare a Nutrient Management Plan to enable you to meet the NVZ requirements.

Following on from Nitrogen other crop nutrient requirements will need to be planned to promote vigorous and healthy spring growth.

Sulphur should now be applied routinely to all crops, not just to oilseed rape. Lack of available S can reduce N-use efficiency and restrict early spring growth. Other key nutrients for cereals are magnesium (Mg), manganese (Mn), copper (Cu) and zinc (Zn). Any shortage of these will lead to a less efficient, less healthy plant. Oilseed rape also has a relatively high demand for boron. It has several key roles in plants and is required for both cell division and cell elongation. Boron is particularly important for root development, during stem extension and at flowering and is essential to ensure good pollen production and ultimately pod formation. Molybdenum is also an element important in oilseed rape, even sub-clinical deficiencies can result in poor growth and poor N utilisation. Early intervention to limit the risk of nutrient shortages is the best approach. Once symptoms of deficiency are obvious, damage has already been done. A healthy crop is better able to stand up to the threats from disease and makes better use of fungicide and nutrient inputs.

CEREALS & OSR

SPRING GRASS WEED CONTROL

The second priority in autumn sown crops after planning nutrient applications will be to assess the success of any herbicide applications and plan follow-up treatments where necessary.

In oilseed there is still the option to apply Crawler as a residualherbicide option up to the end of February. Contact graminicides — subject to previous applications may also be available, especially where spring germinating wild oats, bromes etc. are found.

In cereals, while there may still be the opportunity to apply certain residual products, in most cases, especially in wheat, thoughts will be turning to the contact grass herbicide options. These will need 'good growing conditions' before application can be considered. Coming out of a cold period, patience is required to ensure crop and weeds are actively growing to ensure best efficacy and minimise any crop effect. Resistance in the blackgrass population to the contact herbicides has been increasing. The need and value of spring grass weed control will have to be made on a field by field basis, taking account of the inherent weed pressure and previous history of herbicide performance. A 3-step approach is advocated:

1. Check fields where control has fallen short and assess numbers of surviving grass weeds per m^2 and both weed and crop growth stages.
2. Assess the potential impact of the grass weed population. Relatively few blackgrass plants e.g. $12/m^2$ can cause 5% yield loss in winter wheat. Even low grass weeds numbers can cause longer-term problems as a result of seed return. A single blackgrass head can produce at least 100 seeds. Ten blackgrass plants $/m^2$ with an average of 10 tillers per plant could potentially leave 10000 seeds/m^2.
3. Plan the remedy. Knowing the resistance status of the grass weed population will suggest whether a herbicide application is likely to be effective. Although the success of this will diminish as the grass weed grows larger. Unpalatable though it may seem, spraying off the crop, or at least, part of it, with a total herbicide may ultimately be a more effective, long-term, control strategy. If done early enough there is the obvious opportunity to re-drill with a spring crop which could, at the very least, recoup previous input costs.

CEREALS & OSR

EARLY SPRING PEST ISSUES 2019

Although it is no longer formally monitored, it is highly likely that Wheat Bulb Fly (WBF) hatch is underway, particularly in the east of England. Data collected between 2008 and 2015 indicates that egg hatch was always underway by 20th January in eastern England and typically a little later in the north. Egg hatch may well have started but the diagnostic 'deadheart' symptoms are unlikely to be found until later in February or March. The AHDB survey of WBF egg numbers last autumn indicated a generally low overall risk with average numbers the second lowest since monitoring began in 1984. However, late sown cereals after root or vegetable crops may still be vulnerable to significant damage and loss of tillers. Remember, there are currently no approved egg hatch or deadheart insecticides. If damage is found control will rely on cultural methods e.g. rolling to encourage tillering, and applications of N and other nutrients/ biostimulants to help plants grow away from the damage.

Numbers of cabbage stem flea beetle (CSFB) larvae in oilseed rape crops across the UK are very variable. At some sites in Cambridgeshire up to 19 larvae per plant have been recorded. However, there is no consistent pattern of plant invasion, even within the same region. It is unclear how the recent cold spell will have affected larvae within plants as they will have had some protection from the frosts. However, lower temperatures in the later part of January may have slowed damage progression as egg hatch and larval development is inhibited at temperatures below 3°C.

Field trials have shown insecticides i.e. pyrethroids to be effective against larvae right though until February, but these should not be applied unless the threshold for economic damage is exceeded. A count of five or more larvae per plant or more than 50% of petioles with leaf scarring are considered sufficient to justify insecticide treatment. Resistance to pyrethroids has been recorded in adult CSFB, particularly in the east of England. However, it is unclear whether resistant adults result in resistant larvae. Discuss treatment options and viability with your ProCam agronomist.

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