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Technical Update
Feb '20

FEBRUARY FOCUS

At the start of spring growth there will be obvious concerns about potential nutrient deficiencies following high autumn and winter rainfall.



Following the extreme wet conditions of last autumn and winter to date the first priority – where crops have been drilled – will be to apply nutrition, and primarily nitrogen (N) to kick start spring growth. There will be obvious concerns about how much N has been lost from soil in the wet conditions. Losses will have occurred though leaching, especially on the lighter soil textures, but also through denitrification where soils have been saturated, even for relatively short periods.

The exact level of N loss is hard to quantify and will depend on a number of factors including soil type and the Excess Winter Rainfall (EWR). EWR is the amount of rainfall the land receives after the soil profile becomes fully wetted in the autumn (field capacity) and before the end of drainage in the spring (around the end of March). EWR has an important influence on the amount of nitrate leached and, thus, the nitrogen availability to a crop. It must be taken into account when planning nitrogen applications. Estimates of EWR, based on Met Office rainfall data can be found at <https://ahdb.org.uk/ewr>

With possible uncertainties in estimating the Soil Nitrogen Supply (SNS) this year, analysing soil mineral nitrogen levels may give greater confidence in finalising crop N requirements.

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, taking account of all the above
- Calculated the amount of manufactured fertiliser required

Before applying any form of N, a field inspection is required to assess the risk of run off into surface water. Currently, in wet soils, frosts may provide the only opportunities to get onto land without damaging soil structure. N must not be applied if soils have been frozen for more than 12 hours in the last 24, or when snow covered. Applications on a frost that thaws during the day are permitted. Normal common sense should also meet the requirement not to apply N to waterlogged or flooded ground.

After Nitrogen other crop nutrient requirements will need to be planned to promote spring growth, and ensure optimum N use efficiency.

Sulphur (S) is also very susceptible to losses where the EWR is high. S should now be routinely applied to all crops, not just oilseed rape and applications may need to be increased this year. Tissue tests will give a more accurate guide to check available S levels.

Other key nutrients for cereals are magnesium (Mg), manganese (Mn), copper (Cu) and zinc (Zn). Late sown crops, especially those that have developed in wet soils, will have restricted root systems. Combined with poor nutrient availability in wet soils this suggests foliar application of key nutrients is a high priority for healthy spring growth this year. A healthy crop is more disease tolerant and makes more efficient use of all crop inputs.

CEREALS & OSR

SPRING GRASS WEED CONTROL



Following closely behind planning nutrient applications will be the need to address grass weed control options in autumn sown crops. The cut off date for propyzamide in oilseed rape crops has passed but there is still the option to apply Crawler as a residual option up to the end of February. Contact graminicides, subject to previous applications, can be used where bromes, wild oats etc. are found.

The difficult autumn conditions meant that a number of cereal crops have received no herbicide applications at all. Around 80% of blackgrass is estimated to emerge in September and October. One positive effect from the delayed drilling of autumn 2019 is that if emerged grass weeds were sprayed off before drilling, the overall weed burden will have been significantly reduced in many cases.

If required, residual herbicides can still be applied e.g. Pontos (flufenacet + picolinafen) can be used at 0.5 l/ha up to before GS30. Other flufenacet options can now be used up to GS23 in winter wheat and GS24 in winter barley. However, if the key target is blackgrass, these products used alone or in tank mix will be unlikely to achieve satisfactory results if the weed plants are beyond the 2 leaf stage. In most cases they will need supporting with contact herbicides, primarily based around the meso-iodosulfuron options in winter wheat. In barley Axial Pro is a contact option, although it has activity on blackgrass, its key targets will be ryegrasses and wild oats, where fenoxaprop e.g. Foxtrot can also feature.

The contact herbicides will be more effectively applied to small weeds, but generally also need 'good growing conditions' for optimum effect. Ensure crops and weeds are actively growing before application to achieve optimum efficacy and minimise any crop effect.

Resistance in the blackgrass and ryegrass populations 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.

Knowing the resistance status of the grass weed population will suggest whether a herbicide application is likely to be effective. The likely success of any spring grass weed control will diminish the larger the grass weed becomes. 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.

CEREALS & OSR

EARLY SPRING PEST ISSUES 2020



Many winter cereal crops will not have received a BYDV spray last autumn. Obviously, crops sown in late October and into November will be at much lower risk of infection. However, low numbers of aphids may have migrated into crops and in generally mild winter temperatures have survived and developed infection foci. The few frosts to date will not have been sufficient to reliably kill the aphids, and the effects of wet conditions on aphid survival are not known. The only sure way of checking is to monitor crops and inspect plants in the field. If aphids are found there will be opportunities for effective application of insecticides into the spring. Typically, GS31 is deemed to be the cut-off timing as beyond this stage BYDV infection is thought to have little impact on yield.

Although not formally monitored, it is likely that wheat bulb fly (WBF) egg hatch will have started, especially in the east of England and especially considering the overall mild temperatures in January. The risk this year as assessed by the AHDB autumn egg survey is a little higher than in recent years. Later sown crops, especially those after sugar beet, will be at an even higher risk as they will have produced fewer tillers. With no approved egg hatch or foliar insecticides, any control measures will rely on rolling and applications of N and other nutrients and/or biostimulants to encourage plants to grow away from the damage.

Cabbage stem flea beetle (CSFB) larvae are easily found in oilseed rape crops across the UK. Scarring in the leaf petioles is the guide to larval activity, and in the more severe cases mining into the stem itself. Every opportunity needs to be taken to encourage the crops to grow away from the damage. Pyrethroids may still be justified where more than 50% of petioles show scarring, although resistance issues in the adult population may limit their efficacy.

Although CSFB takes much of the focus an increasing number of crops were found infested with winter stem weevil (WSW) larvae last year. These larvae have brown heads and are legless in contrast to CSFB winter stem weevil larvae. They can cause severe damage to plants as they invade the stems.

No thresholds are suggested for control, but confirmatory identification may be needed where serious damage to oilseed rape stems is found.

