



PROCAM
AGRONOMY THAT DELIVERS™

Technical Update
Nov '21

MID-AUTUMN POINTERS

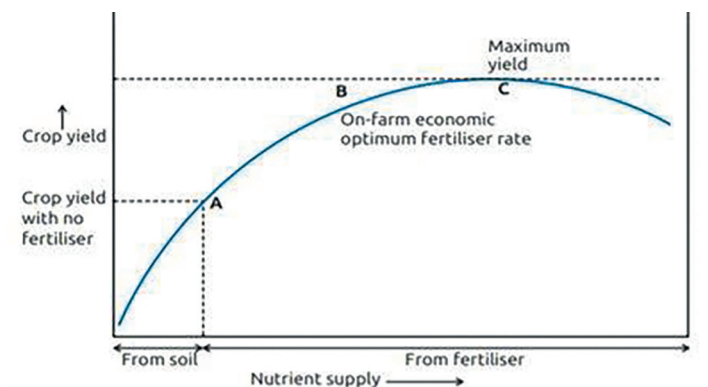
Dramatic increases in input prices have required some focus on agronomic principles during the typically busy autumn drilling and field work window.



While there have been inevitable disruptions to field work in various areas after typical British autumnal weather events, progress with drilling has generally been good and with fewer issues compared with the previous two autumns.

Of bigger impact for most has been the dramatic increase in fertiliser prices, especially nitrogen, combined with concerns whether adequate supplies will even be available. This has raised questions about the value of applying N and crop selection with some looking at growing more leguminous crops. However, early signs are that there has been no major shift in cropping pattern and the focus is on optimising the use of all available N this season.

N is a very cost-effective input to crops and as a general principle N recommendations are relatively insensitive to changes in crop prices or the cost of N fertiliser. The general response to N is summarised in the graph below.



This demonstrates large increases in yield up to the 'on-farm economic optimum nitrogen rate'. Maximum yield is reached at a nitrogen rate greater than the on-farm economic optimum and is never a target for optimum profitability.

N recommendations for cereals and oilseeds are calculated using a typical break-even ratio to provide the best on-farm economic rate of nitrogen to apply. For cereals the optimum N rate as shown in the Nutrient Management Guide (RB209) is based on a break-even ratio of 5:1 i.e. where 5 kg of grain are needed to pay for 1 kg of N. If there are large changes in this break-even ratio, the economic rate of N would start to slide back down the response curve and some adjustments to total N applications would be suggested.

Based on current N prices and wheat values the estimated break-even ratio has increased to around 8-9:1. The result of which is not a catastrophic requirement to not apply any N fertiliser at all, but to apply a reduced rate of N, cutting back applications by around 40 kg/ha.

For oilseed rape the optimum N is typically based on a 2.5:1 break-even ratio. At current oilseed rape crop values this would suggest a much smaller adjustment in N application rates. Of course, in all these calculations the hardest part to estimate is the future value of the harvested crop.

The rising cost of fertilisers will place greater value on alternative sources of nutrients e.g. organic manures, including digestates. Another option, while not replacing 'lost' N is to encourage healthy plants with vigorous root systems that are able to more efficiently scavenge for any nutrition available to them. The application of biostimulants such as Viteum R help to promote root growth in the autumn. A ProCam field scale trial produced a >0.4 t/ha yield increase over untreated plots in winter barley. Manufacturer trials have also demonstrated improved yields of 2-4% in winter wheat where Viteum R was applied in the autumn.

Discuss with your ProCam agronomist, all options to optimise N efficiency this season to maintain crop yield potential.

GRASS WEEDS

CONTROL IN BREAK CROPS



After prioritising weed control in cereal crops, one of the next agronomic challenges is to optimise the grass weed control in the 'break' crops e.g. oilseed rape and winter beans.

At this time of year the focus is mainly on optimising the performance of the residual herbicides based on propyzamide and carbetamide in these crops. Soil temperature and moisture are critical to getting the best from these residual herbicides. Soil moisture is needed to distribute residual herbicides evenly into the top 5cm or weed germination zone of the soil. Soil temperatures must be cooling — around 10°C at 30cm and falling. At these temperatures the half-life of propyzamide is around 100 days but at 15°C this is reduced to 60 days. So, in cooler soils the herbicide lasts longer, providing greater activity on germinating weeds. To help optimise propyzamide performance Corteva Agriscience has an online tool to aid the decision on herbicide timing:

<https://www.corteva.co.uk/tools-and-advice/kerb-weather-data.html>

Based on your individual postcode, the tool will provide a simple 'traffic light guide' for the optimum application timing. Obviously, this guidance has to be assessed along with weather conditions to finalise the application window.

Where oilseed rape crops have established well with large leaf canopies the addition of organo-silicone adjuvants e.g. Dynetic, may both help the herbicide move through the crop canopy and improve distribution on the soil.

N.B. this type of adjuvant should only be considered with 'straight' propyzamide options and NOT the aminopyralid/propyzamide formulations.

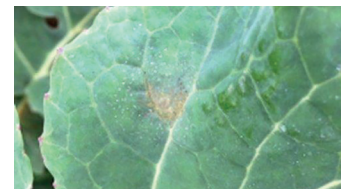
Although soil moisture is important, soils must not be saturated or waterlogged. Care must be taken to avoid any risk of contamination to water and all aspects of good water stewardship must be followed. In particular, do not apply to soils where drains are running or when rainfall is forecast within 48 hours. Propyzamide and carbetamide may be applied in frosty conditions, but avoid applications to frozen ground as subsequent rainfall could cause surface run-off into adjacent watercourses.

N.B. propyzamide must be applied pre-crop emergence and within 7 days of drilling the winter bean crop.

N.B. carbetamide is under revocation. Final date for all sales is 30.11.21 and on-farm use by 30.11.22

OILSEED RAPE

DISEASE RISK AUTUMN 2021



The AHDB phoma forecast has been refined and updated in 2021 to more accurately reflect field realities. The model, developed in the early 2000s, uses temperature and rainfall data to simulate the development of the phoma pathogen. The model now only takes account of rain events over 10mm and total rainfall over 200mm. Consequently, the model now tends to predict later start dates for the threshold 10% plant infection level to trigger fungicide application. Across much of the UK the model was predicting threshold phoma infections from mid-October onwards. Fungicides need to be applied as soon as threshold levels are reached. As ever, later sown, smaller crops are at very high risk as the fungal mycelium can more easily move down the leaf petiole into the stem. Full details of the regional phoma risk can be found at:

<https://ahdb.org.uk/phoma-leaf-spot-forecast>

The other autumn disease threat to oilseed rape comes from Light Leaf Spot (LLS) and typically November is the key timing for effective fungicide intervention. The forecasting programme for LLS has also been updated this autumn and, at the time of writing, the prediction of LLS incidence for 2021 was not available, but will soon be found on the AHDB website:

<https://ahdb.org.uk/light-leaf-spot-forecast>

The regional forecast highlights the proportion of oilseed rape crops predicted to have more than 25% plants infected by the spring. It is based on the level of LLS infection on last season's crops and deviation from the 30 year means for temperature (July and August) and winter rainfall.

These forecasts should only be used as a guide to potential disease risk. Regular monitoring on a field-by-field basis will be necessary to assess local variation to the general outlook. To confirm infection, leaf samples should be placed in plastic bags and incubated at 10-15°C for up to 5 days to bring out symptoms. Alternatively, samples can be checked for LLS and other key diseases using the 'Spot Check Initiative' supported by Bayer and ADAS.

Increased tolerance of LLS to azole fungicides has been identified. Using products from different action groups is recommended, even where LLS is not the main target.

Your ProCam agronomist will have details of all options to suggest an appropriate, integrated fungicide strategy for your individual crops and varieties.