

ProCam Group Ltd.
Industrial Estate
Saxon Way
Melbourn
Royston
Herts. SG8 6DN

Tel: 01763 261592
Fax: 01763 262869



NEW 4CAST INFORMATION HIGHLIGHTS POTENTIAL DOSE RATE FLEXIBILITY

Top 25% producers spend 30% less on agrochemicals/tonne of production of winter wheat than bottom 25%

Correct assessment of resistance level key to assessing appropriate herbicide and fungicide rates

A new analysis of crop protection data based on 10 years of field results suggests recommended dose rates for many agrochemicals can be cut by up to 60% without reducing efficacy.

The new findings represent the most extensive analysis of dose rate manipulation ever carried out in the UK, says ProCam technical director Dr. David Ellerton, but producers and their advisors should proceed with extreme caution.

“ProCam agronomists are currently crop walking in excess of one million acres of crop production a year and information from this is constantly fed into our 4cast predictive agronomy system. With ten years of results now in the system, we believe we have the first statistically accurate field based analysis of when and where it is safe to cut dose rates.”

No two situations are the same, Dr. Ellerton explains, saying decisions need careful analysis of many inter-linked factors. Obvious issues such as impact on quality and yield, economic balance and consequences of possible control failure need detailed consideration but more intangible issues with particular relevance to following crops, such as higher disease threat, inability to control problems and increased costs, should be factored in, as well.

“Our 4cast data shows the average gross margin for winter wheat in 1994 was nearly £980/ha and 10 years on we are now looking at around £300/ha at 2004 prices with area aid removed. This drop in crop profitability certainly focuses the mind on cost savings but also increases the impact of getting agronomic management issues wrong.

more

more

“That said, the same data shows the top 25% of producers in the UK are spending 30% less on variable spray costs per tonne than the bottom 25% - £13/tonne as opposed to £19/tonne – so carefully managed dose rate reduction can obviously achieve significant economic benefits.”

Weed Control

“Generally speaking, the relationship between herbicide spend and yield is a flat line so the optimum decision is to spend what you need to protect yield and no more. Significant cuts can be made to dose rate without affecting control but this is highly dependent on resistance levels and weed populations,” Dr. Ellerton explains.

“In very resistant sites, results show a tank mix of Flupyr-sulfuron 40g/ha + trifluralin + MSO would give approx. 90% control and would be the best option whereas on less resistant sites the Flupyr-sulfuron, in the mix, could be reduced to 20g/ha for the same level of control.”

Broad leaved weeds present more of a problem, when it comes to discerning dose rate. The main broad leaf weed types have varying levels of susceptibility to dose rate. For example to control Sheperd’s Purse or Mayweed with Picolinafen/Pendimethalin you would have to stick to the full recommended dose rate to get a 90% control whereas with Pansies and Red Dead-Nettle you could use a 40% dose rate to achieve the same level of control from the same chemical. Selecting dose rate in this situation means a careful analysis of the main weed threats and making a judgement from there.

Overall, an analysis of 4cast data from last year for Autumn residual herbicides, showed pendimethalin + picolinofen, isoproturon, isoproturon + diflufenican and flutamone + diflufenican still being cost-effective at dose rates below 60% of the full recommended dose rate and therefore giving the most flexibility to reduce rates. On the flip side, flufenacet + pendimethalin, flupyr-sulfuron and flupyr-sulfuron + thifensulfuron should always be used at full dose to achieve the necessary control.

A similar exercise for spring contact mecoprop and fluroxypyr shows effective control down to 30% of full dose rate.

more

more

Pest Control

Assessment of pest risk should always take in information on previous crop, region, drill date, adjoining crop, seed dressing, weather conditions, previous insecticide and presence of pest, Dr. Ellerton explained.

In terms of BYDV, high risk situations should always be treated with a full dose or two half doses. Medium risk could be dealt with through a single three quarter dose and low risk through a half dose or no spray at all if no aphids were seen.

“But pest control is relatively low cost so you have to decide whether it is worth taking any risks at all when it comes to cutting dose rates,” Dr Ellerton concludes.

Disease Control

The main influences on cutting dose rates in fungicides are growing resistance issues and the fact that some fungicides encourage significantly higher yields at higher dose rates. Cutting rates could therefore inflict considerable margin penalties.

“Over the last few years we have seen alarming increases in Septoria resistance, particularly to Strob/Qols. Data shows average resistance level across the country is now over 80%. Sensitivity to Strobs/QOIs has decreased by 400 times in the last 12 years compared to 4 times for DMIs.”

Chlorothalonil is looking like the best bet for base line Septoria control now but different formulations have different levels of control so making any general recommendation regarding dose rates is difficult, he says.

“You can cut dose rate by nearly 2/3 for some products without reducing control but you will lose yield as a result. With chlorothalonil, the best approach seems to be to go no lower than 50% of recommended dose rate then you should get good disease control and a benefit to yields but this is highly dependent on the individual situation.

more

more

Dropping below 75 – 80% with triazoles would also adversely effect yield response but with prothioconazole the effect seems to be even more marked. Data shows a dose rate of 77% of that recommended produced a yield advantage of £12.54/ha whilst upping the rate to 96% of the recommended produced a £33.06/ha advantage.

“With fungicides, the rule seems to be the more you spend the greater the benefit. Strob/Qols have been shown to increase photosynthesis, improve stress resistance and reduce transpiration. Cut too far and you will lose all these advantages.

“The latest ProCam 4cast data, however, shows the reality is that few fungicides are applied at full rate. Qols/DMIs are applied on average at around 40% and other groups are down as low as 20%.

In conclusion, Dr. Ellerton says considerable savings can be made by reducing dose rates but there are few generalised rules and every situation needs individual appraisal and the correct criteria applied.

“Producers should never attempt to cut rates in isolation and should always use an agronomist with access to the right information,” Dr. Ellerton says.

“The bottom line really is to use an integrated crop management approach and use as much agrochemical as is necessary but as little as possible. Use your agronomist wisely to guide you on this.”

Ends

PRM034

16th November 2004

Notes to editors

- i.) The ProCam Group employs more professional agronomists, crop walking more acres than any other organisation in the UK and now covers the whole of the British Isles from the South West of England to Northern Scotland.

more

more

- ii) ProCam 4cast is a predictive agronomy system designed to provide growers with agronomic information specific to their individual farming situation. The system is based on analysis of a specially developed database of UK crop production utilising practical agronomic results from one million acres of arable land each year built up over the last ten years.

- iii) The company is celebrating 25 years of trading in 2004 and is now the UK's leading supplier of crop protection products and crop advice having doubled the size of its business in the last three years alone.

Further information is available from Dr. David Ellerton, ProCam Ltd., Royston, Herts.

Telephone: 01763 261587 e-mail ellerton@dial.pipex.com

Issued by Philip Hailey, Proterra Ltd., Stamford, Lincs. 01780 756299