

Black-grass seeds have a low dormancy this autumn – allow maximum germination and spray off prior to drilling

Final results from HGCA funded research has shown that dormancy in black-grass seed samples this autumn is **low**. Seeds for the project were collected by ADAS, AICC and Rothamsted Research. Weather data from ADAS and Rothamsted Research indicated a particularly hot year, with temperatures 2-4 °C above the 40 year mean, but also much drier than average.

The actual figure is 53% germination based on 37 geographical samples taken in 2006. We also have results for 20 samples tested in each of the last six years as part of a LINK project (LK 0923) and the results below summarise the findings. 2006 results are similar to those in 2001, 2003 and 2005, all after warmer summers. In all years samples were collected from across the country and we have not identified any consistent regional patterns.

Year	Mean % black-grass seed germinating	Conditions during black-grass seed maturation
2001	62	Hot and dry
2002	22	Cool and damp
2003	57	Hot and dry
2004	28	Cool and damp
2005	59	Warm and damp
2006	53	Hot and dry

As in previous years, despite an average low dormancy, a few samples did show higher levels of dormancy indicating that local conditions are still important.

These test results are borne out by field observations of black-grass beginning to germinate within the crop before harvest. Low dormancy is likely to mean a less protracted germination period for black-grass.

What do these results mean?

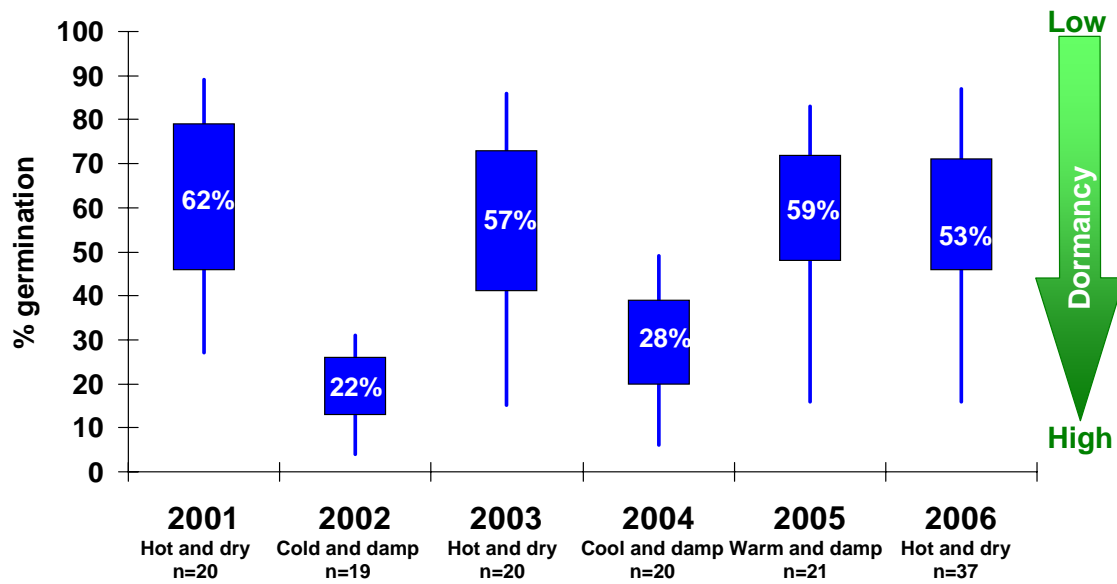
2006 is similar to last year. 2005 and 2006 were typified by ‘non-dormant’ seeds, which are likely to germinate readily with adequate seedbed moisture, unlike 2002 and 2004 when seeds were more dormant and unwilling to germinate even with adequate seedbed moisture.

Black-grass seeds this year have a similar level of dormancy to 2001, 2003 and 2005. Observations made in 2001 saw seeds germinating within the crop before harvest due to adequate moisture. In 2003 a high proportion of seeds were ‘non-dormant’ but failed to germinate in September due to an absence of available moisture in the late summer/early autumn. However, in 2003 when the rain did arrive, we saw a rapid emergence of black-grass. This year some black-grass has already begun to germinate prior to harvest and with unsettled weather forecast for the next two weeks more are predicted to emerge.

The prediction this year is that germination should be rapid as long as there is adequate seedbed moisture. Maximising black-grass germination and spraying off prior to drilling is crucially important. This year looks like providing a good opportunity to reduce numbers before drilling, an essential part of any strategy and especially important to reduce implications of resistance. Keeping the black-grass seed in the top 5 cm of the soil and retaining moisture to encourage germination makes shallow cultivations a suitable option for this season.

This project was sponsored by HGCA (Project Number 3275). For further information please contact Sarah Cook, ADAS Boxworth (e-mail sarah.cook@adas.co.uk; Tel. 01954 268215).

Appendix 1. Dormancy patterns in black-grass (2001-2006)



Notes on graph for editors

This is a box plot. For each year the graph shows the most extreme values in the data set (maximum and minimum values), the lower and upper quartiles, and the mean (written in).

The darkened boxes indicate the quartiles, the first quartile of a group of values is where 25% of the values fall at or below this value. The third quartile of a group of values is where 75% of the values fall at or below this value.