



UNDERSTANDING THE HIERARCHY OF BLACK-GRASS CONTROL

Positive steps have been made in terms of controlling black-grass across the UK in the last 10 years. This achievement has been built on the strong-footings of using our knowledge of weed biology to inform the practices that will bring most reward.

Cultural practice

This includes setting better rotations, cultivation strategies and drilling dates, which is one of the effective techniques. NIAB's long-term dataset shows a 50% reduction in weed density from delaying drilling (Figure 1).

Herbicide programmes

The adoption of routine pre-emergence herbicides, at the expense of ALS and ACCase herbicides, for black-grass control has been an obvious change in the last five years as a result of widespread resistance. However, it remains easy to become too dependent a select few active ingredients. It is important to utilise the full range of Mode of Actions available within a herbicide programme to both maximise efficacy and reduce the risk of resistance building. Figure 2 demonstrates that using a more diverse programme will deliver better performance than increasing the dose of a single MoA.

Timing of application

Sequencing the residual components of a herbicide programme is effective as it captures the full germination period, and reduces the pressure on the crop, which itself is a tool to weed control. Starting with a true pre-emergence application (within 48 hours of crop establishment) is vital, with a follow-up when weeds are at cotyledon stage the most potent combination.

Application technique

NIAB's recent work on this topic indicates that the interactions of tank mix, nozzle type and water volume can be incredibly variable for pre-emergence applications. It is vital that your choices do not negatively affect the previous steps of the hierarchy. Applying at 200 l/ha appears to be worth an additional 10% control but will cut your work rate, if this risks delaying your pre-emergence application, so reducing control then using a lower water rate would be recommended.

Summary

Concentrate on the factors that make the greatest contribution to weed control. Subsequently, avoid practices that risk degradation of those key decisions.

Figure 1. The reduction of black-grass heads as a result of delaying drilling by one month in the autumn

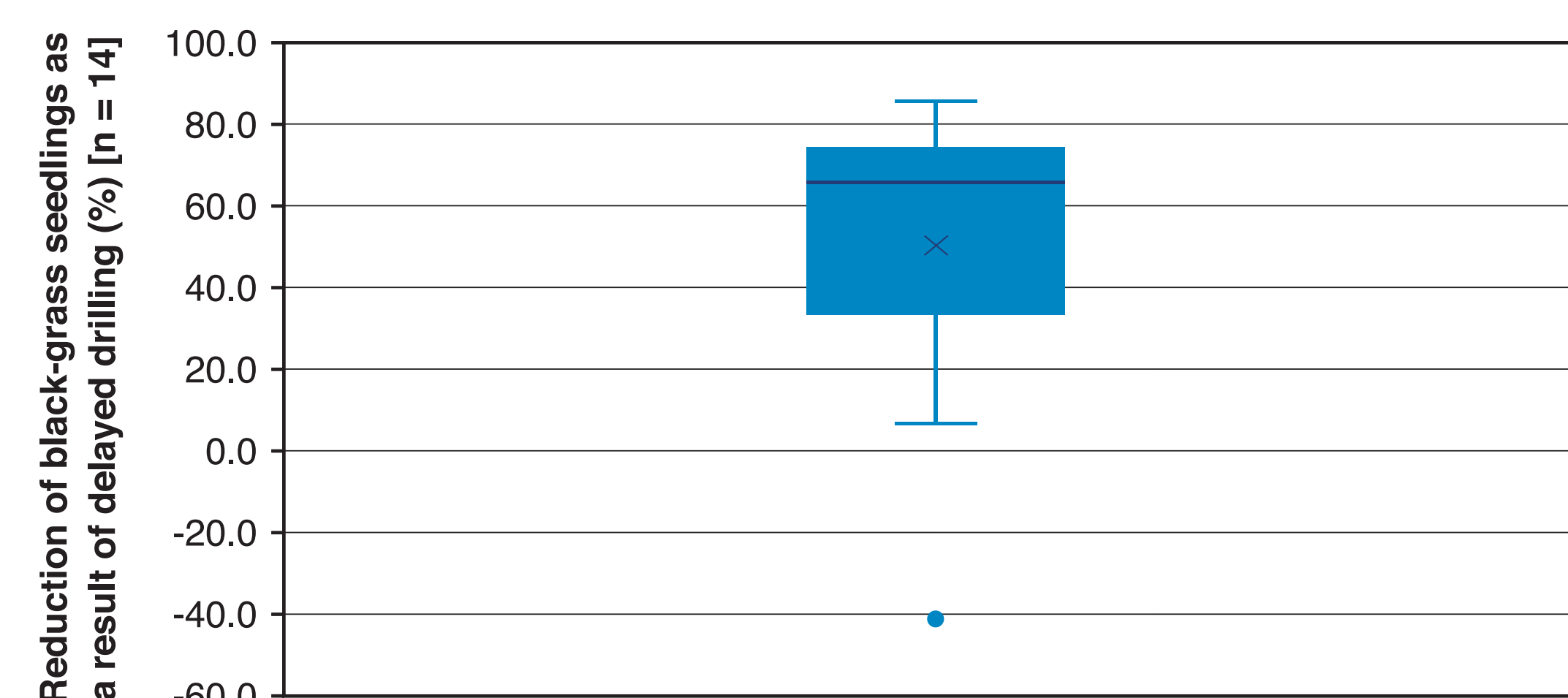


Figure 2. Increasing Loading Factor by two methods determines different control level (Loading Factor = Number of MOAs x Number of Non-Unique MOA applications)

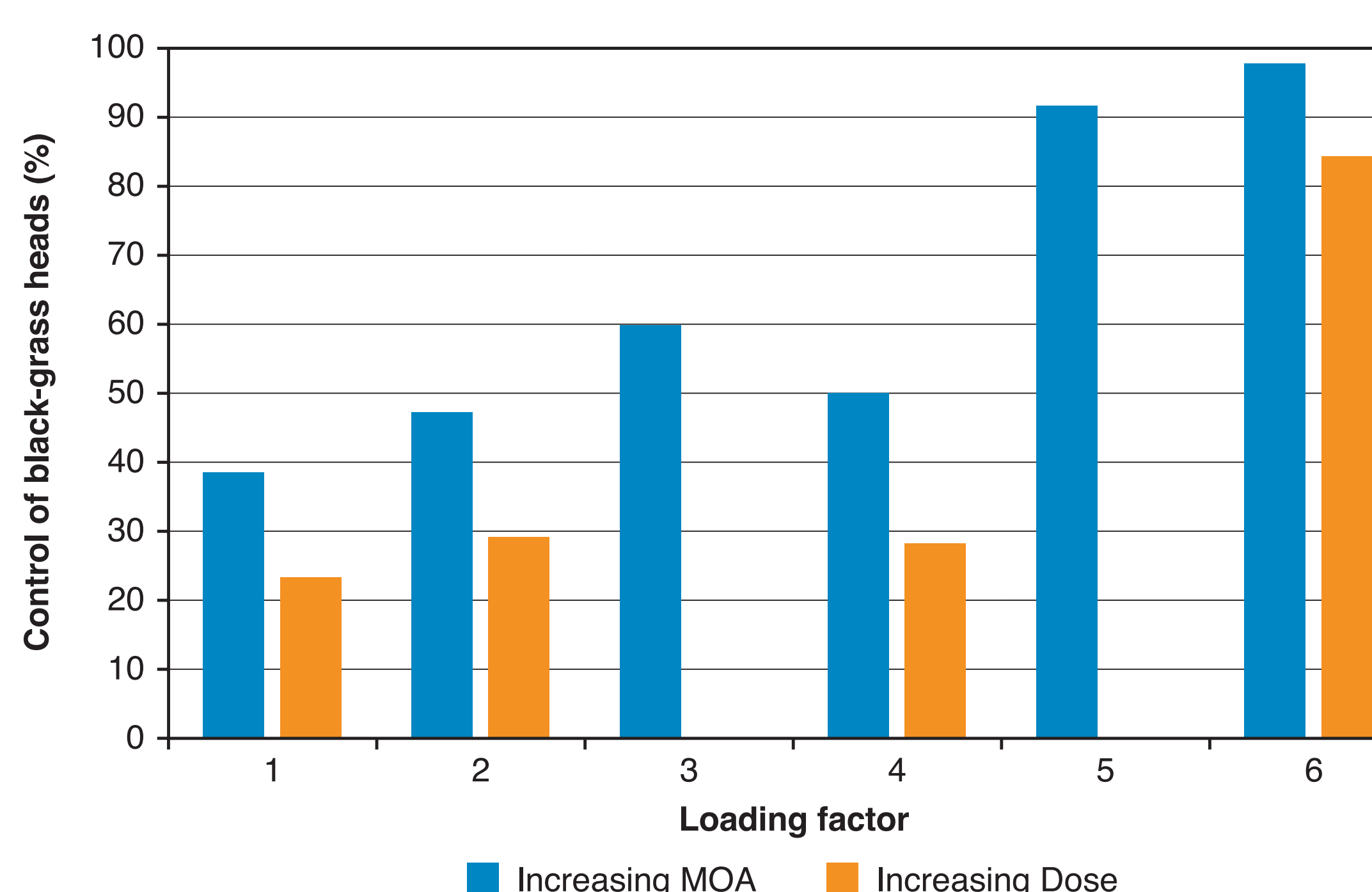


Figure 3. The benefit of splitting applications for black-grass control

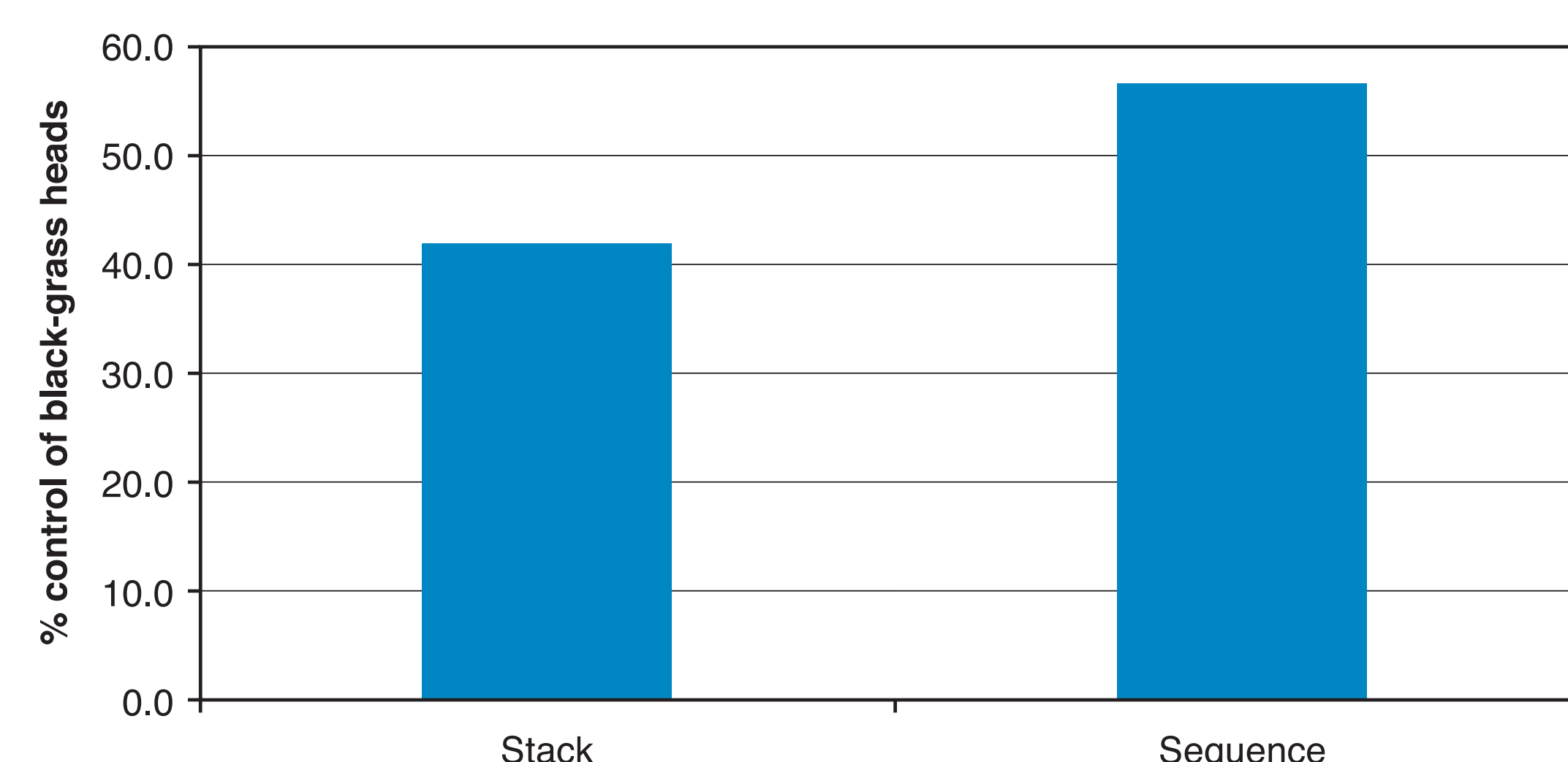


Figure 4. The average improvement in control of black-grass when using 200 l/ha is 10%. However, there is considerable variability across all recent work

