NIAB Plant Science into Practice

WEED SEED PREDATION IN REGENERATIVE AGRICULTURE

Regenerative agriculture aims to enhance ecosystem services, including weed management, through sustainable practices. Weed seed predation is a natural process that can contribute to weed suppression in agroecosystems. Tillage practices, such as conventional tillage and zero tillage, can influence weed seed predation dynamics.

focus on NIAB research

NIAB assessed weed seed predation in black-grass, wild oats, and meadow brome across different seasons and fields.

Using a seed card method, predation levels were compared in three long-term conventionally tilled fields and three long-term zero-tillage fields. Two trials were run, each spanning a five-week period during autumn 2023 (Figure 1) and spring 2024 (Figure 2) within the same fields, to evaluate differences across fields, weed species, and seasons.

Higher predation rates in zero-tillage fields were noted compared to conventionally tilled fields. Predation levels varied significantly between different weed species and seasons. The findings suggest that zero-tillage practices enhance weed seed predation, contributing to sustainable weed management.

Implications

Adoption of zero-tillage practices can promote natural weed control through increased predation rates. Understanding the influence of tillage practices on weed seed predation can inform farmers' decisions regarding sustainable weed management strategies. Incorporating zero-tillage methods may offer cost-effective and environmentally friendly weed control options for regenerative agriculture.

Figure 1. The impact of different tillage systems on predation levels of problematic grass weeds during autumn

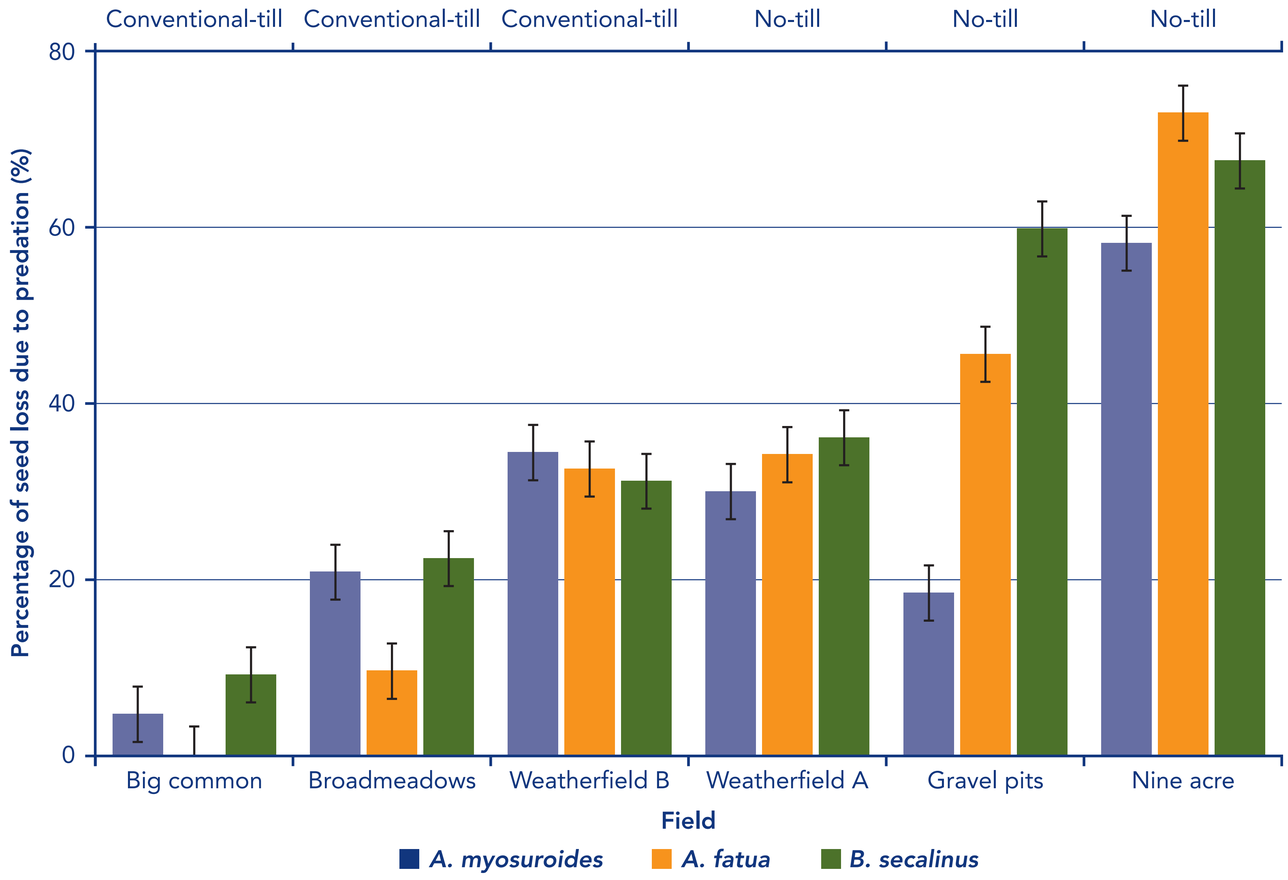

Figure 2. The impact of different tillage systems on predation levels of problematic grass weeds during spring