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Managing cool-season turfgrass without herbicides: Optimizing maintenance practices to control weeds

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Trials (from a different study) investigating the interaction of mowing height and nitrogen fertility on weed encroachment as alternatives to traditional herbicide use. Photo courtesy of Bernd Leinauer.

Several European countries have already banned or will soon ban the use of synthetic herbicides on turfgrass areas. Such strict sanctions require the adoption of alternative and innovative management approaches to maintain the attractiveness and usability of turfgrass areas without the use of traditional herbicides.

A new article in *Crop Science* summarizes several measures that have been proposed in the literature to increase the competitiveness of turfgrasses against weeds. Such measures for non-chemical weed control include the use of adapted cultivars that germinate and establish quickly, resulting in the densest possible stands. Research and breeding efforts could also focus on turfgrasses that produce allelopathic substances inhibiting common turfgrass weeds. Increasing mowing heights and using organic herbicides derived from fungal pathogens and bacteria are both effective at controlling certain weeds.

Management programs have reduced fertilizer inputs for environmental reasons; however, in the absence of herbicides, fertilization regimes need to be re-examined. Lower nitrogen rates can result in increased weed pressure, which makes weed control problematic without herbicides. Future research needs to adopt a holistic integrated approach that examines the benefits of several management approaches and how they interact to control weed populations without synthetic herbicides.

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Hahn, D., Sallenave, R., Pornaro, C., & Leinauer, B. (2020). Managing cool season turfgrass without herbicides: optimizing maintenance practices to control weeds. *Crop Science*, 60. <https://doi.org/10.1002/csc2.20175>

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