

Growing New Opportunities: Expanding Secondary Agricultural Education Through Turfgrass Science Professional Development

Need for Innovation

School-based agricultural education (SBAE) programs continue to evolve to meet workforce needs while exposing students to diverse agricultural career pathways. As agriculture becomes increasingly specialized, agricultural educators are frequently expected to teach emerging content areas that may not have been included in their preservice preparation. Successful implementation of new agricultural education courses requires teachers to possess sufficient content knowledge, instructional resources, and confidence in teaching unfamiliar subject matter (Rankin et al., 2025). Turfgrass science represents an opportunity for expansion within secondary agricultural education. The turfgrass industry encompasses careers related to golf course management, sports field management, landscape management, turfgrass production, and environmental stewardship. Despite continued demand for qualified professionals within the turfgrass industry, relatively few secondary agricultural education programs offer dedicated turfgrass science instruction, limiting student exposure to this segment of agriculture (Streich, 2019). Research has suggested educators often demonstrate interest in emerging content areas while simultaneously reporting a need for additional preparation and support, emphasizing the importance of targeted professional development opportunities (Dreher & Robinson, 2024). To address this need, a series of USDA-funded professional development workshops were developed to support agricultural educators interested in expanding local course offerings through turfgrass science instruction.

How It Works

A series of regional professional development workshops was conducted to support implementation of turfgrass science curriculum within secondary agricultural education programs. Workshops were supported through external funding and designed to increase teacher preparedness for implementing turfgrass science curriculum. Workshop programming combined classroom instruction, curriculum exploration, hands-on learning experiences, industry exposure, and implementation planning. Participants were introduced to turfgrass curriculum resources, instructional materials, and teaching strategies that could be incorporated into existing plant science coursework or utilized to support a dedicated Turfgrass Management course. Workshop sessions highlighted turfgrass career opportunities and student engagement activities. Participants completed pre- and post-workshop assessments measuring prior turfgrass experience, instructional confidence, and implementation intentions.

Results to Date/Implications

A total of 54 agricultural educators participated across three workshop cohorts. Participants averaged 7.67 to 11.13 years of teaching experience. Across cohorts, relatively few participants had previously taught a turfgrass management course, and no participants in

Amarillo reported prior experience teaching the course. Three outcomes associated with curriculum adoption were examined: confidence teaching a turfgrass management unit, intention to implement a dedicated turfgrass management course, and intention to incorporate turfgrass science concepts into an existing plant science course. Mean scores increased across all three measures following workshop participation (Table 1), indicating greater confidence and stronger intentions to implement or integrate turfgrass science instruction. Participants reported increased confidence in teaching turfgrass science content, stronger intentions to implement a dedicated turfgrass management course, and greater willingness to integrate turfgrass science concepts into existing coursework. Improvements were observed across all three workshop cohorts. These findings suggest targeted professional development may support implementation of emerging agricultural education content areas.

Table 1

Selected Participant Outcomes Before and After Workshop Participation

Measure	Amarillo Pre M	Amarillo Post M	Lubbock Pre M	Lubbock Post M	College Station Pre M	College Station Post M
Confidence teaching turfgrass management.	4.00	4.56	2.74	4.20	2.50	3.94
Intention to implement a turfgrass management course.	3.89	4.33	3.52	3.88	3.44	3.89
Intention to integrate turfgrass science into plant science instruction.	4.33	4.44	3.59	4.12	3.89	4.39

Note. Scale: 1 = Strongly disagree, 5 = Strongly agree.

Future Plans/Advice to Others

Future efforts will focus on supporting long-term implementation of turfgrass science curriculum, evaluating curriculum adoption, and expanding instructional resources for agricultural educators. Additional professional development workshops will continue to build educator content knowledge while supporting implementation of turfgrass science within secondary agricultural education. Future efforts also include development of a Turfgrass Science Career Development Event (CDE) to provide authentic opportunities for students to apply technical knowledge and explore turfgrass-related careers. Continued collaboration among educators, curriculum developers, and industry partners may strengthen adoption of turfgrass science programming and expand secondary agricultural education course offerings.

References

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