Perceptions of implementation of small interference RNA use for weed management in turf

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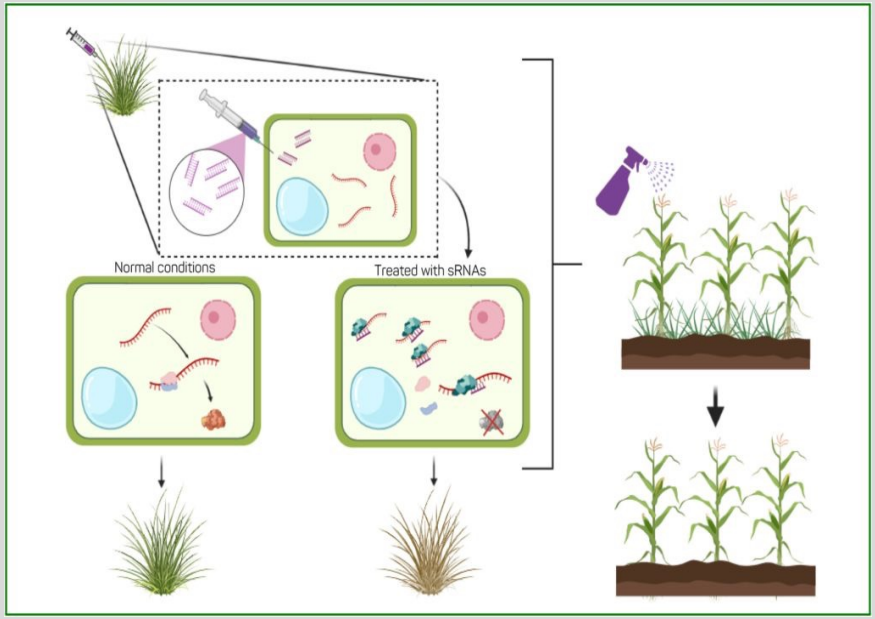
Benefits:

- Sprayable liquid
- RNAi could:
  - reverse herbicide resistance
  - be used to target new mechanisms of action
  - cause weed death
- RNAi sequences can be designed to be selective
- Non-GMO weed control technology
- Environmentally friendly: no toxic residues in soil or environment
- Potentially low regulatory concerns

RNA Interference (RNAi) is used to silence particular genes found in weeds that affect the growth and development of plants or enhance weed susceptibility to herbicides. This technology can be topically applied, like a herbicide, for uptake through plant leaves, roots, and flower buds.



Survey Purpose

In the context of rapidly evolving herbicide resistant weeds and the necessity for new solutions, it is imperative to understand the context in which small interfering RNAs could be released, and potential perceptions of this new technology, to identify the pathways or constraints for adoption.

Risks/challenges:

- Development of resistance to RNAi is unknown
- Time to registration of this new technology is unknown
- Scalability of the product is unknown
- Currently, only one major company developing the product
- Opposition from consumer groups is uncertain
- Many weed species lack high quality genomic resources, which could constrain development for this genetic tool for weed management

References available upon request.

Image Reference:

Zabala-Pardo, D., Gaines, T., Lamego, F. P., & Avila, L. A. (2022). RNAi as a tool for weed management: challenges and opportunities. *Adv Weed Sci, 40*(spe1), e020220096.