

# GERMINATION OF AMBROSIA TRIFIDA IN THE ENVIRONMENT AND ITS RELATIONSHIP WITH LUMBRICUS TERRESTRIS

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*Ambrosia trifida*, commonly known as giant ragweed, is a native weed in the United States. It has become more common as its populations have increased unexpectedly throughout the past decades. Giant ragweed causes seasonal allergies and invades crop fields as it competes for resources and propagates by means of large seeds. Even though it is a native plant it acts aggressively, similar to an invasive species. It is important to discover why *A. trifida* behaves this way and to develop solutions to prevent its spread. One reason for the increase in giant ragweed is its interaction with *Lumbricus terrestris*, a European species of earthworm that has become common in the United States. This earthworm species burrows through the soil to the surface, grabs the seed with its mouth, and then draws it beneath the soil into its burrow. Seed burial by earthworms protects seeds and provides an optimum environment for germination the following spring. Experiments were conducted on giant ragweed's germination and seed dormancy, and on earthworm seed foraging behavior. Initial observations revealed that *L. terrestris* shows a greater preference for smooth *A. trifida* seeds over spiny seeds. From this, it was hypothesized that the spiny seeds that remain on the surface retain better protection against animal predation due to spines, while smooth seeds are protected by seed burial. This research provides a deeper understanding of the earthworm-weed relationship, which is necessary to formulate a solution to the problem in the future.