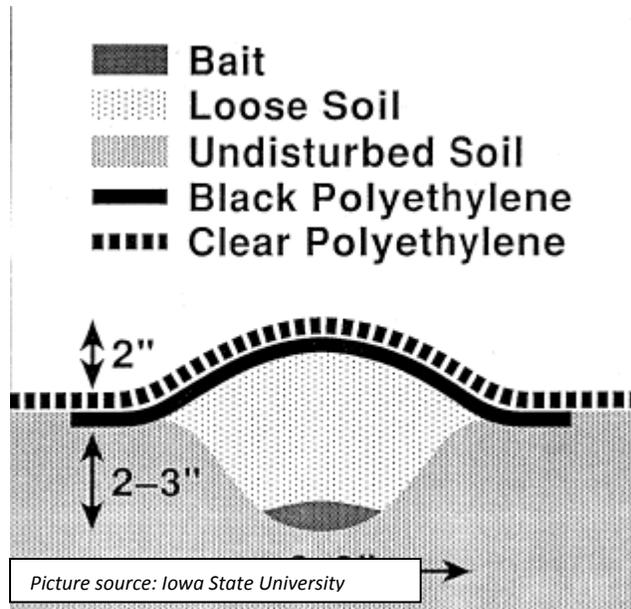


# Germinating Seed Bait Technique for Intensive Sampling

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Germinating seed bait technique has been shown to be the most cost-effective relative sampling technique for a variety of subterranean insect pests. Seed bait technique can complement or replace absolute sampling method such as spade sampling, which could be laborious and time-consuming in extensive sampling program. Germinating seed bait technique has been used successfully in agronomic crops, vegetable crops, pasture, and fields under the Conservation Reserve Program because this method is relatively easy to set up and remove for assessing wireworm populations.

Materials needed: Untreated corn/wheat/sorghum seeds, water, black polyethylene trash bag, shovel, large Ziploc bag (optional)

## Method:

1. A mixture of seeds can be used for increasing attractiveness of seed baits to different insect species (especially for detecting wireworms).
2. Pre-soak the seed mixture for a 24-hour period before placement to encourage seed germination.
3. Dig a hole about 10 inch wide and ~6 inch deep in soil and put an appropriate amount of seed mixture in the hole.
4. Cover the seeds with a shallow layer of soil and put a 15 inch x 15 inch piece of black polyethylene bag on top of the mound. Use soil to seal the edges of the polyethylene bag. The black cover will trap solar radiation and facilitate seed germination. It also will deter animals from disturbing the bait. You can put colored flags to mark the position of your bait stations.
5. Although it is difficult to recommend a specific number of baits per acre, about a dozen or more bait stations in a 40-acre field could be sufficient. Remember, the fewer the number of sampling units, the lower will be the accuracy of sampling and vice-versa.
6. It is recommended that seed baits be maintained for at least one week in spring of each year or up to one week prior to planting crops. If feasible, seed baits should be deployed throughout the production season in fields with a history of wireworm infestation to monitor peak larval activity.
7. At the end of sampling period, dig out the germinating seeds AND soil surrounding the seed bait. Sometimes wireworms collect just under the seed bait, so collecting surrounding soil improved detection. Carefully go through the sample by manually sorting the bait on a large plastic tray or by pressure washing over a mesh.

8. For intensive sampling program, the entire sample could be stored in a Ziploc bag, frozen and checked at a later date (freezing prevents rapid organic matter decomposition inside the bag).

Note: Attractiveness of seed bait to wireworms is affected by their population distribution and species present in the field. A number of seed baits could be left in ground for different time periods in order to trap a large variety of below-ground and surface-dwelling insects.

It should be noted that scouting with special equipment and design improves with experience of the field personnel. If good records are maintained, then these sampling techniques can complement your physical plant observations and provide you information about seasonal activity of insects over a number of years. Insecticidal treatments should be applied at the most appropriate time toward the most vulnerable stage of insect lifecycle.