Gophers

Integrated Pest Management Options
Ellie Andrews, August 2023


(UC IPM)

Background

- Gophers are small burrowing rodents that are typically 6-10 inches in length
- They eat plant roots and can cause crop damage, most often feeding on plant roots
- Tend to remain underground in burrow systems
- The best indicator of gophers is mounds of fresh soil that are created as they dig tunnels and push the loose dirt to the surface
- Gopher mounds are typically crescent shaped
- In irrigated areas, gophers can create burrows year-round

Management Options

IPM provides a toolbox approach to pest management. Choose a combination of management options that makes sense for your context. This helps minimize the risk of the local gophers adapting to one specific strategy.

Monitoring

- Early detection and prompt action are key for gopher management: less expensive and less time consuming to control populations early, before their numbers build up
- Timing: in the winter, gopher populations are lower and growers tend to have more time, so it can be most practical to focus on management during late fall and throughout the winter
- Identifying new mounds is key to effective management: multiple removal sessions every couple of weeks are often needed because there is often a 1-2 week interval between the creation of new mounds
- Monitor adjacent areas: likelihood of reinvasion is high, so consider monitoring and controlling gophers in areas near the field
- Once pocket gophers have been controlled, continue monitoring on a regular basis for reinfestation

Biological Control

- Encourage predators of gophers
    - Predators of gophers include: barn owls, hawks, herons, snakes, badgers, coyotes, weasels, etc.
    - Owl boxes can encourage gopher predation:
        - A long-term program (not a quick fix) to buffer rodent outbreaks as one strategy within a larger IPM plan
        - The number of owl boxes per acre depends on the owl population in the area: growers can start with 3 or 4 owl boxes per ranch, then add more once those boxes reach approximately 60% occupancy

Cultural Methods

- Crop varieties
    - While there are no plants that have been proven to deter gophers, crops with more fibrous roots and monocot cover crops can help reduce problems because they are less desirable than plants with large taproots
    - In areas where gophers are present, avoid planting cover crops with big taproots because they attract gophers
- Rotations with grain crops
- Buffer area with grain crops
- Taking a break from cover crops can help reduce populations
    - Note: in an orchard with high gopher populations, removing this food source could increase crop damage, so depopulate first before removing food sources
- Deep tillage (at least 12 inches) to destroy burrow systems
- Exclusion via underground fencing is only practical on a small scale: small areas can be protected with wire underground screening, but beware of restricting root growth

Physical Methods

- Develop an effective trapping program
    - It takes practice, but is safe and effective
    - Though labor intensive it may be more cost effective than fumigation
    - Locate fresh mounds of soil to find recent gopher activity
    - Use a gopher probe to locate a recent burrow and place traps
    - Traps
        - Two-pronged pincer traps (such as Macabee, Cinch, Gophinator) are most common
        - Gophinator trap seems most effective because it captures larger gophers at a higher rate
        - Choker style box traps require extra excavation
    - If no gopher activity is present in a 24 hour time frame, move traps to a new location to increase the likelihood of capture
    - Human scent does not influence trap capture success
    - Baits have not been found to increase trap capture success

    - See the UC IPM pocket gopher page for more info on trapping program
- Flood irrigation can drown or force out gophers, though this effect might be temporary
- Strategies that have not been shown to be effective include:
    - Gas cartridges, explosive devices, and smoke bombs are not typically effective
    - Frightening (with sounds, vibration, etc.) is not effective
    - Repellents are not effective

Rodenticides

- There are currently no OMRI listed organic rodenticide options
- Toxic baits
    - Strychnine is the most effective option
    - Other options: zinc phosphide and first-generation anticoagulants
- Burrow fumigation
    - Aluminum phosphide tablets can be very effective: this is a Restricted Use Material so a permit is required for purchase and use, and it can only be used by or under supervision of a Certified Applicator
    - Carbon monoxide machines can be moderately effective

Please email Ellie Andrews at eandrews@ucanr.edu for an electronic version of this outline.

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