Integrated Approach to Controlling Pocket Gophers

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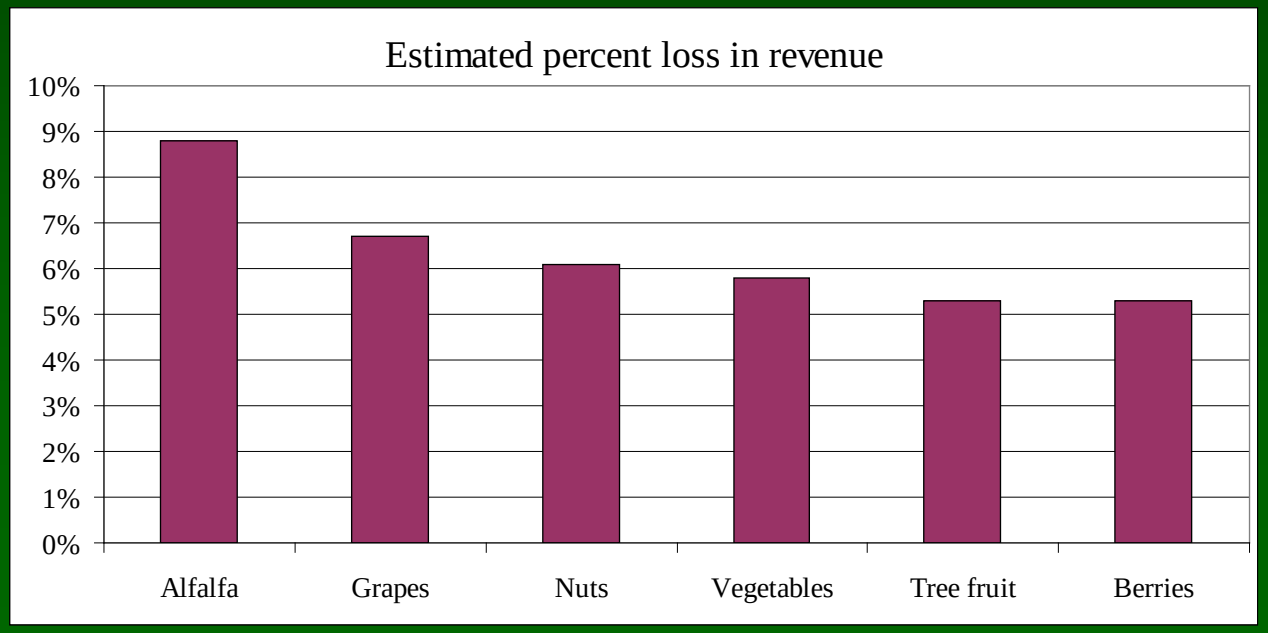
Pocket Gophers

- Burrowing rodent about 6-8 in long; rarely seen above ground.

- Gopher mounds are plugged and often fan-shaped.

Pocket Gophers

- One of most damaging wildlife species in western ag.
- Damage estimates range from 5.3-8.8% loss for various crops when present.

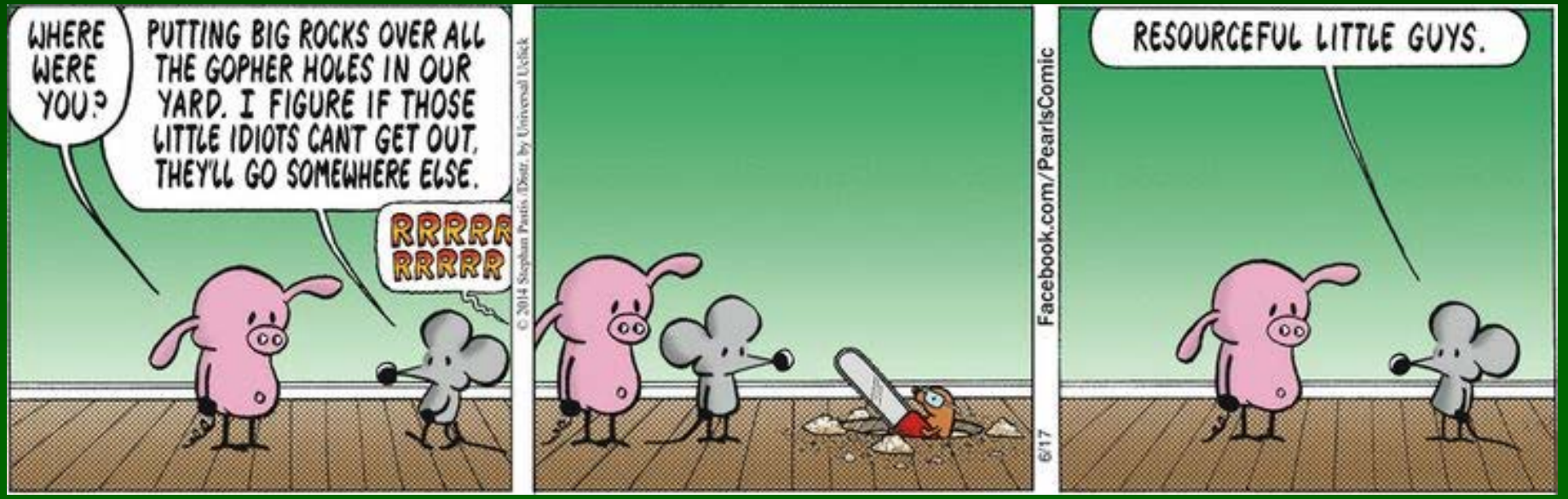


Current Control Strategies

- Currently, we focus on an integrated approach that utilizes a number of strategies and tools to control vertebrate pests.

What Control Options are Available?

	Habitat modification	Baiting	Burrow fumigation	Trapping	Exclusion	Repellent	Frightening	Shooting
Pocket gopher	X	X	X	X	?	?		



Control Options—Biocontrol

- Natural predators have been used to control vertebrate pests.
- Owl boxes are inconclusive at best.
- Gopher snakes kill a few gophers but are unlikely to control populations.

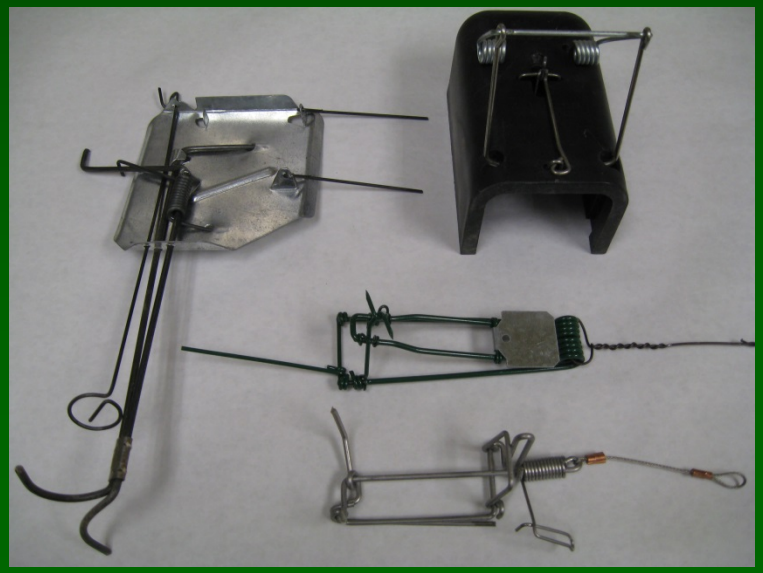
Control Options—Habitat Modification

- Involves altering habitat or soil to reduce the desirability for pests.
- Example:
  - deep ripping to remove gopher burrow systems.
  - control weeds to reduce food sources for gophers.

Control Options—Trapping

Pocket gophers

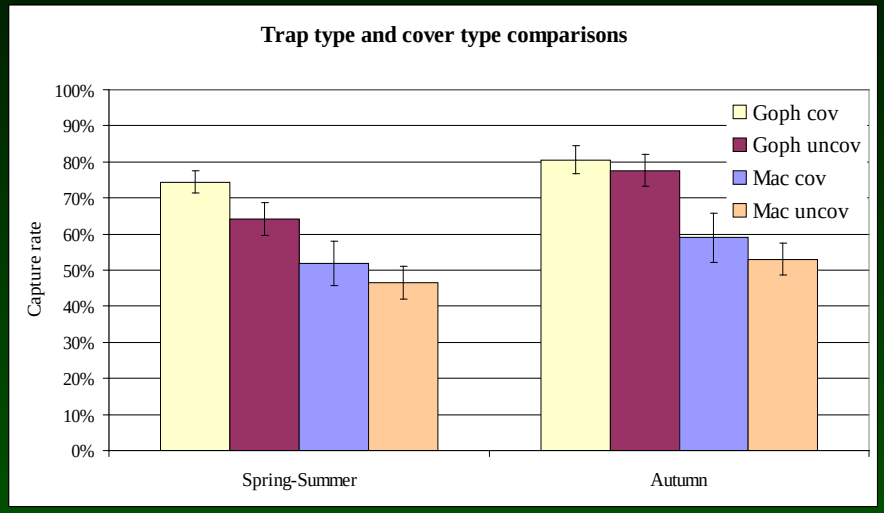
- Has many positive attributes including:
  - knowledge that you've removed the target animal.
  - no use of toxic chemicals.
  - available for use in organic setting.
  - can be efficient and economical once user becomes proficient at trapping.
- Two main kinds of traps: pincers and squeeze-type box traps.

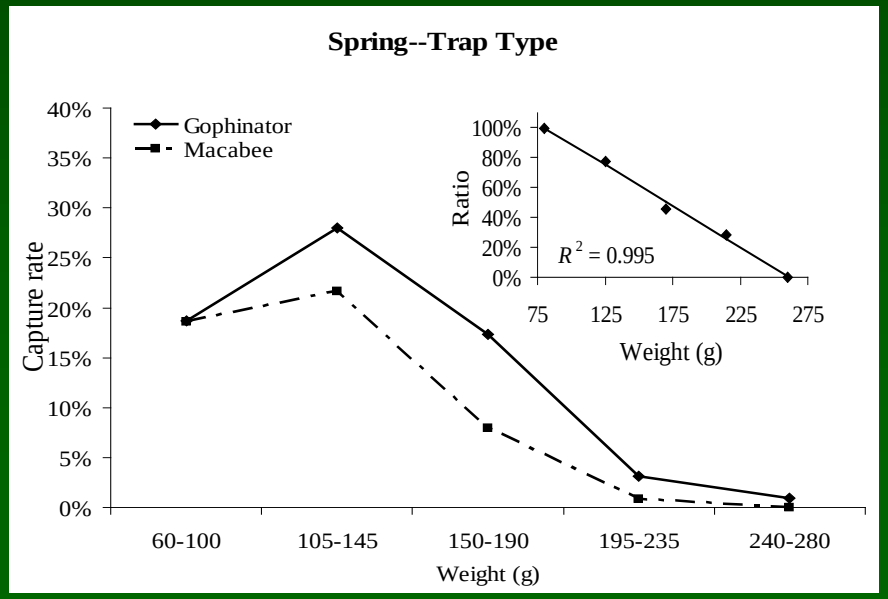


Trapping—Options

Pocket gophers

- Gophinator trap was more effective.
- Covered sets yielded slightly higher capture rates in spring-summer, but not autumn.
- Efficacy was offset by setting time.

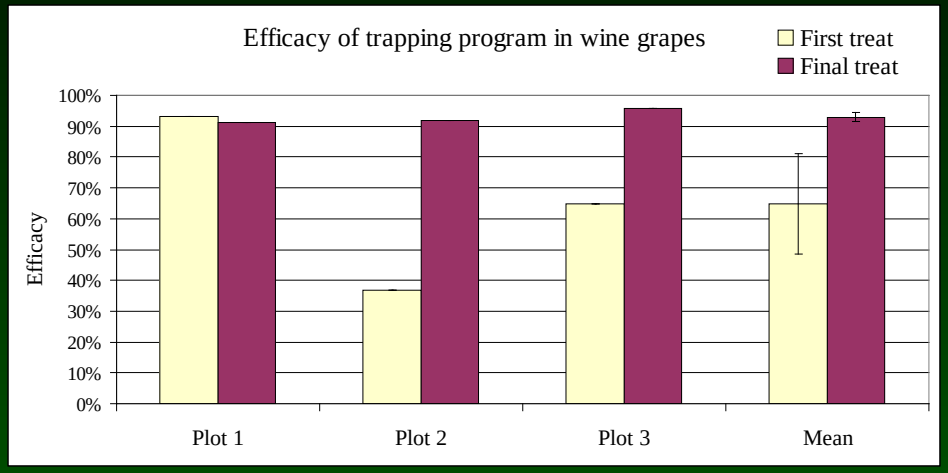


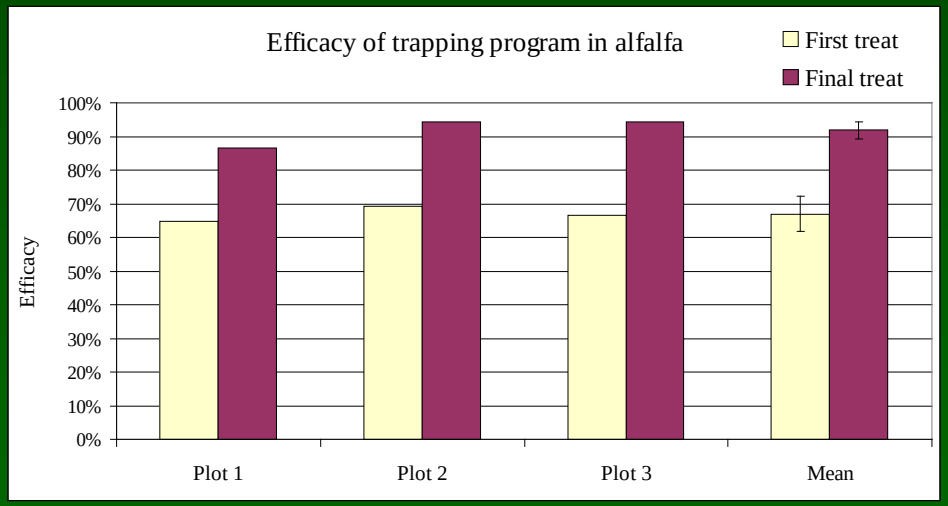


Trapping—Efficacy

Pocket gophers

- Exhibited high efficacy in wine grapes after two treatments.
- Exhibited high efficacy in alfalfa after two treatments.





Control Options—Baiting

- Involves use of poison baits to control vertebrate pests.
- There are restricted use and non-restricted use baits but typically most are now restricted use unless using in your yard or garden.

	Anticoagulants	Zinc phosphide	Strychnine
Pocket gophers	X	X	X

Control Options—Baiting

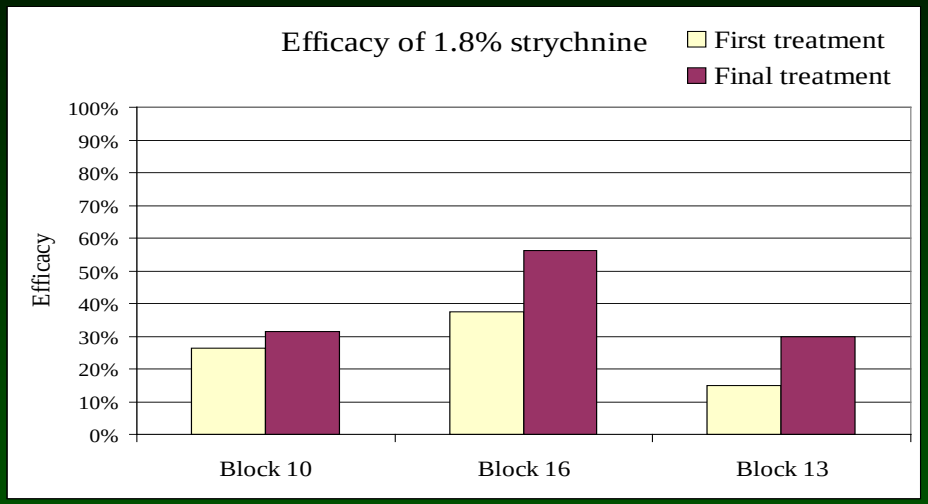
Pocket gophers

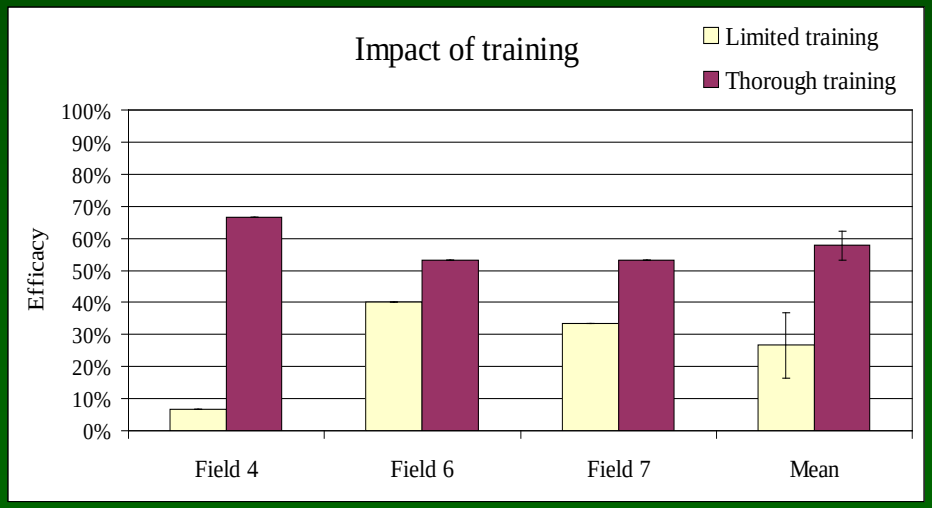
- Strychnine works best.
- Use probe to find tunnel.
- Dispense bait in tunnel.

Control Options—Baiting

Pocket gopher

- efficacy for pocket gopher baits varies across studies.
- study with 1.8% strychnine indicated low efficacy.
- potential reasons could include poor applicator training.





Pocket Gopher Rodenticides

Product	AI	Carrier	S. Rosa	Pala	Total
Control	Maintenance diet	Rat chow	1/10	0/10	5%
CDFA	Chlorophacinone (0.01%)	Oat grain	3/5	2/5	50%
Rozol	Chlorophacinone (0.005%)	Wheat grain	3/5	2/5	50%
Wilco D	Diphacinone (0.005%)	Milo grain	------	0/5	0%
RCO Patrol	Diphacinone (0.005%)	Pellet	1/5	2/5	30%
Wilco ZP	Zinc Phosphide (2.0%)	Wheat grain	2/5	3/5	50%
Bell ZP	Zinc Phosphide (2.0%)	Pellet	4/5	0/5	40%
Omega	Strychnine (0.5%)	Oat grain	5/5	0/5	50%
Avalon	Strychnine (0.5%)	Mixed grain	5/5	1/5	60%
Bromethalin	Bromethalin (0.01%)	Milo grain	------	0/10	0%
Terad$_3$	Cholecalciferol (0.075%)	Pellet	------	2/5	40%
C+D	Chole (0.03%) + Diph (0.005%)	Pellet	5/5	3/5	80%
C+B 1	Chole (0.03%) + Brod (0.0025%)	Pellet	------	5/5	100%
C+B 2	Chole (0.015%) + Brod (0.0025%)	Pellet	5/5	5/5	100%
C+B 3	Chole (0.015%) + Brod (0.00125%)	Pellet	------	6/10	60%

Control Options—Fumigation

- Involves use of poison gas in burrows to control vertebrate pests.
- Works best when soil moisture is high (late winter early spring for gophers).
- Fumigants should not be used around buildings.

Control Options—Fumigation

Gas cartridges

- Not effective for gophers.

Aluminum phosphide

- Highly effective for gophers (90-100%).
- Is a restricted use pesticide.

Control Options—Fumigation

Carbon monoxide producing machines

Control Options—Fumigation

- Steve Orloff and I have begun to collect efficacy data.
- PERC appears to be moderately effective.

Species	Device	Authors	# of fields	Efficacy
Pocket gopher	PERC	Orloff	3	56%
Pocket gopher	PERC	Baldwin & Orloff	3	62%
Pocket gopher	PERC	Baldwin & Orloff	2	68%

Control Options—Other Strategies

Gas Explosive Device

- Involves combustion of propane and oxygen.
- Kills animal through concussive force and will destroy burrow system.
- May not be overly effective and has potential hazards.


Questions?