

Managing vertebrate pests for safe urban food growing

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In urban areas, where city farms and community gardens are often near other land uses, those adjacent spaces can harbor vertebrate pests, affecting the safety of growers and PCAs while creating food safety risks for those consuming them. At this time of year in California, city farms and gardens are lush with ripe fruits, tasty leafy greens, and chunky underground root crops dense with nutrients, sometimes picked too late or forgotten. At the same time, as growers transition cultivation from summer to fall crops, compost piles can get taller, and folks occasionally forget a fruit or two on the vine. Sometimes growers go on vacation before the school year starts, and other times they might just forget to turn that warming compost pile at their site. Coupled conditions where nearby land uses exist together, like infrequently picked up garbage waste and infrequently turned piles can become the perfect places for vertebrate pests like rats, mice, voles, moles and ground squirrels.

When thinking about crops' food safety risks, think about managing against potential rodents because controlling them prevents unsafe foodborne and zoonotic illnesses. Salmonella, Leptospira, rat bite fever, plus produce safety concerns like urban soil particles carrying heavy metals like lead, can come from rodents carrying diseases and contaminants affecting humans, poultry, livestock and pets. While many lump them together as rodents, rats and mice have different behavior patterns growers can learn to prevent their population growth. While each has different habitats, rats such as Norway and roof rats, for example, are cautious, opportunistic and have a larger geographic range they cover. Ultimately, identifying your specific vertebrate pests correctly is the most important first step in controlling their populations in urban farm or community garden sites.

Food source availability, and consistent access to food over time, including spilled feed in chicken coops, and unharvested produce in gardens sited near trash compactors, present perfect conditions for rodents to thrive, and may attract insects and bird pests as well. Controlled management of rats and mice leads to disease prevention through urban farm site sanitation, sound land management, even in built environments and reduced populations. Reducing rodents in urban food growing sites is hard because so many are near food sources, along rail lines/transit corridors where trash is often dumped, where residents may leave open food sources, or in between buildings where populations may already reside.



*Rat Damage on Kale, Transplant Starts in an Urban Farm.
 Photo: Matthew Linzner, Love Cultivating Schoolyards, East Oakland*

Eliminating food, water, burrowing opportunities and closing access to spaces where they can hide and reproduce helps deter population growth, but sometimes baited traps may still be the best solution. Feed chickens, rabbits and other urban farm animals only the amounts of food they will consume at one time or retrieve uneaten foods to prevent their being spilled and eaten by rodents. Keep garden trash and debris neat, and contained as much as possible with tight, clean lids, and reduce vegetation which can be habitat by pruning trees, shrubs and hedges where possible.

Minimize or seal cracks or openings in compost bins, animal cages and build raised planter boxes with galvanized steel mesh underneath. This prevents rats and mice from having family-litters under your food growing beds where they have abundant food sources as plants' roots and are with little risk of predator- or human-disturbance. Access to water and food supplies can be through entry into barns, greenhouses, high tunnels, and cold frames, where they may be in warmer temperatures as the seasons turn towards winter colds. Once found, place traps or bait stations every 25-50 feet around the perimeter of farm or garden structures, and along routes in crevices where they may migrate less visibly.

In addition to prior mentioned Salmonella, rat bite fever and Leptospira, ground squirrels can also carry the plague, and can damage food producing and ornamental plants. They may sometimes chew on irrigation lines for water, and their burrowed holes can damage gardens spaces and structures while also causing trip hazards to growers. The management against ground squirrels, rats, mice, voles and moles is best done by traps and bait stations depending on population size, the time of year and methods preferred by land managers.

Proper urban farm site planning for design and use that prevent food plus water access and blocking ways rodents may gain entry is among the best control measures in early stages. Consistent management against vertebrate pests when site conditions allow regular re-entry for accessing nearby food sources or migratory routes, will help when populations are low. Remember, when one rodent is seen, there may be more, so visit the University of California's Integrated Pest Management website (<http://ipm.ucanr.edu/PMG/menu.house.html#STING>) to get up to date, science-based information to control vertebrate pests and prevent the food borne illnesses they can carry in urban farms and community gardens. ■



Rodent-caused Crop Damage. Photo: Steve Moros, Bancroft Community Garden, Berkeley, CA

Additional resources on urban farm start up production, food safety, legal basics or marketing and business development can be found at https://ucanr.edu/sites/UrbanAg/Urban_Ag_Workshops/.

What Control Options are Available?								
	Habitat Modification	Baiting	Burrow Fumigation	Trapping	Exclusion	Repellent	Frightening	Shooting
Ground Squirrel	X	X	X	X				X
Pocket Gopher	X	X	X	X	X			
Voles	X	X	?	?	X	?		
Rats & Mice	X	X	?	X	X			

Credit: Roger Baldwin