

Deterring Pests, Naturally

John Foster

Botanical repellents emerge as attractive complement in pest control

Rodent control in the restaurant industry will always be challenging since these highly adaptive pests learn from experience and rapidly adapt to changing conditions to meet their needs for food, water and shelter.

It's no secret that customers, shareholders, auditors and employees have growing concerns about the use of toxic materials in our establishments, particularly in proximity to food and food-preparation areas. It goes without saying that traps require frequent monitoring, and rodents can create disposal concerns. Botanically derived repellents are emerging as an increasingly attractive, functional and cost-effective complement in sustainable and responsible pest management programs.

A New Breed of Botanical Repellents

Early-generation botanical repellents had poor reputations due to performance issues and inconsistent quality. They were often just scaled-up recipes used by so-and-so's grandparents in their pantry during the Great Depression.

Many of the products available today have well-researched documentation showing consistency, efficacy and safety, and a few are EPA registered or fall under 25(b) exemptions. Among the essential strategies and tactics of exterior environmental management, robust interior and exterior building maintenance, good sanitation practices and exclusion techniques, botanical repellents offer several advantages for the restaurant environment.

First, botanical repellents easily complement and enhance existing, traditional pest-management practices. They can be used to drive rodents and insects from hard-to-access areas and into areas more easily or safely monitored or into areas where traps may be employed and inspected more readily. Some of the best niche-use examples, long ignored by other control methods, include under prep tables and food storage cabinets, behind sinks and refrigeration units, and in drop-ceiling spaces, crawl spaces, and electrical or mechanical equipment rooms.

Another proven use is at common entry points to deter rodents from entering in the first place. Used in any of these ways, the net result is greater efficacy of the pest-management system as a whole.

Next, some products have long-lasting effects depending on their delivery methods, with a few having 30- to 60-day efficacy. The benefit here is that these can be placed and replaced on a monthly cycle in areas that are just not feasible to inspect more often, which is the frequency that would be required for traps and bait pouches or stations. Additionally, some formulations can be suspended in the air, wall mounted or placed on the ground to provide optimal placement in nearly every restaurant environment, irrespective of location, traffic patterns, architecture or climate. Additionally, with long-lasting efficacy, the cost per use is at least competitive, even without factoring in the labor costs associated with daily or weekly monitoring, bait replacement, trap cleaning, carcass disposal and so on. As an additional benefit, some products have a pleasing scent for people while still deterring rodents.

Lastly, botanical compounds offer a sustainable, and now effective, alternative to synthetic poisons. The latter are coming under increased food-safety and regulatory scrutiny, can have damaging effects in the wildlife food chain and pose concerns for accidental transmission or accidental poisoning of non-target species, including humans. Botanicals are a renewable resource, derived from plants that have been evolving for millions of years to repel exactly the same pests that darken your restaurant doors today. We've just needed to refine the botanical compounds and the delivery methods, and the industry has done just that.

An Ounce of Prevention

One industry estimate suggests a cost of ~\$1,800 per incident—in fines, repairs, maintenance and/or labor—when a rodent is detected by auditors or food-safety inspectors. Of course, this doesn't include costs associated with negative press or social-media exposure if rodents are seen by patrons, which can be devastating to brand reputation. Since even a single rodent incident can cause significant regulatory or food-safety headaches, and public perception nightmares, a little prevention goes a long way.

Aroma-based rodent repellents can work in multiple ways, such as masking attractive scents, providing confusing aromatic signals, or inundating rodent scent receptors so that they cannot detect predator presence. Rodents have evolved and thrived in just about every inhabited environment on the planet, so their survival over time has been dependent on being able to detect

predators near them. When their scent receptors are overwhelmed, their brain signals a flight response. Even though we know foxes, coyotes, snakes and other predators aren't in the restaurant—hopefully!—the rodents don't know this, so they tend to be skittish and leave the area when their scent receptors are inundated. (While predator urine is also an effective aromatic deterrent, most would agree that this is best used as far from restaurants as possible.)

Placement Strategies

The trick is to place the repellents where they will demonstrate efficacy and a solid ROI, with the least intrusion possible into the workflow of the restaurant—and preferably without making it obvious to patrons that rodent control is even necessary. Common placement areas include:

- On either side of doors and other openings in walls: These are common entry points for rodents and other pests, so flanking the doorways at ground level is a good first step to deterrence.
- In drop ceilings: These are less frequently considered harborage sites, but warmth and shelter from the elements, and a lack of human foot traffic, make the cavities above drop ceilings prime real estate for rodents throughout the year. Additionally, these spaces are hard to access and problematic areas in which to set and monitor traps.
- Basements, cellars and crawlspaces: These locations also provide easy points of entry and abundant harborage sites. Since these are places where rodents can quickly dig in and become well established, repellents can be especially effective when consistently used.
- HVAC unit enclosures: In many climates, HVAC enclosures offer consistent harborage sites for rodents. Where air intakes are present, it is especially important to ensure rodent fecal material doesn't accumulate, as it can pose inhalation threats to the public.
- Behind refrigerators and compressor units: Offering year-round warmth and moisture, these are common harborage sites that can go undiscovered for months. Placing scent-based repellents behind and under these units—and replacing them monthly—is particularly effective.
- Electrical, mechanical and server closets: Although they are generally forgotten by staff, restaurants often include numerous cavities and interior entry points associated with these important elements. They are generally dry, infrequently monitored and close to food sources. Rodent damage in these areas can be remarkably expensive.

- Water heater closets: These locations offer warmth throughout the year. Monthly placement of repellents can be very effective.
- Cleaning supply cupboards and closets: Many times, these spaces house not just cleaners but also mops, brooms, rags and other supplies that are enticing materials for bedding and nesting. Since these items are used in the front and back of the house, it is critical that rodent contaminants are kept out of these areas.
- Under and behind stoves and ovens: These areas are common harborage sites and are rarely inspected closely, especially inside appliance housings. Aromatic repellents along the back and sides of appliances can deter rodents from a distance.
- Coat rooms and closets: Often tucked near entryways, these can be waystations for rodents that have gained entry and are waiting until closing time to access the rest of the restaurant.
- Interior landscaping and planters: Often a distinguishing component of the restaurant experience, these features can also provide abundant harborage and, in some cases, alternate food sources for rodents and other pests. Since these are usually placed in and around seating and tables, non-toxic materials are critical in pest-management considerations.

With a little forethought and prevention, restaurant facility managers can identify many locations in their establishments where it's far preferable to keep rodents out than to get them out. While there is no substitute for good cleaning and sanitation practices, robust building maintenance and thoughtful exterior environmental management, long-term pest management and control requires a multi-faceted strategy. Proven, EPA-reviewed and registered botanical repellents and deterrents are reliable, cost-effective and sustainable and offer kinder environmental impacts for all.

John Foster is the Director of Business Development for EarthKind. He has been working in sustainable food and agriculture for nearly 30 years, focused on creative, effective solutions to pernicious problems.