



Integrated Pest Management



*Brawley Union High School District
480 North Imperial Ave.
Brawley, CA 92227*

Valley Pest Services, Inc.

Material List

<u>Name</u>	<u>Active Ingredient</u>
Advion Ant Gel	Indoxacarb
Advion Cockroach Gel	Indoxacarb
Drione Insecticide	Pyrethrin
EcoVia CA	Isopropyl
EcoVia EC	Thyme Oil
EcoVia G Granular Insecticide	Thyme Oil
Phantom Pressurized Insecticide	Chlorfenapyr
Phantom Termiticide/Insecticide	Chlorfenapyr

INTEGRATED PEST MANAGEMENT

The challenge of IPM is that it often cannot be delivered by formula. Once the basic principles have been understood, there is no substitute for resourcefulness and ingenuity in developing practical, site-specific pest management solutions. It is incumbent upon all personnel involved in the pest management program to actively support IPM initiatives and provide resources for implementation. This includes trained Pest Controllers, Pest Control Quality Assurance Evaluators, and through our continuing education processes, your personnel.

In the diagnosis of *any* pest presence, the question which must be addressed is, “Why are the pests present?” The first step of IPM, the inside inspection, usually answers this question. Our technicians inspect and will review the availability of entry points for pest species, sanitation issues, actual current pest infestations, and any other issues conducive to pest infestation with the agency. During our inspections, we place pesticide free monitoring boards in strategic locations. These monitoring boards assist our technicians in determining what pests and which species are present.

The second part of this process will be a full and complete inspection of the perimeter of the building. Pest infestations usually come from outside the building. This will give us an overview of the possible habitats and transportation corridors for the pests. It will also show where the possible entry points are.

Valley Pest Services, Inc. technicians are trained to determine which methods are best, in any given situation. Our priorities will be to use non-chemical approaches. If these are not practical or possible, we will then consider other options, starting with low toxic alternatives like baits or gels, and ending with a more traditional pesticide application if all other options are eliminated. Regardless of the IPM method employed, we will monitor and report the result to ensure that the pest control needs of the school are addressed.

We utilize IPM thinking for all pest control operations. We use a similar plan for each problem area specified in the scope of work. While there are different types of pests, the concepts of IPM remain the same. We manage the pest with the most effective yet safest environmental methods.

Each general pest technician is equipped with an IPM inspection kit, which includes specialized equipment to facilitate better inspections in unseen and hard to reach areas.

Non-chemical pest control methods are implemented or recommended wherever feasible. These methods will include sanitation, interception, exclusion, trapping, monitoring, harborage removal, vacuuming, habitat modification and lighting. A brief explanation of each of these methods follows:

Sanitation: Sanitation involves cleaning up and removing potential food and water sources for pests. The fewer food sources that exist, the fewer pests that can survive in the habitat. Also, pests will be more drawn to the baits when there are fewer options around for them to feed. We recommend a regular schedule of cleaning floors, equipment, floor drains, trash receptacles, and dumpsters as the best approach to minimize food sources for pests. We also recommend that water leaks be repaired promptly, and wet mops hung up to dry.

Exclusion: Exclusion involves sealing up cracks and holes where pests can enter. This is accomplished by caulking and the use of screens or steel wool. Exclusion is the most effective method to prevent pests from entering a building. We perform minor exclusion as necessary and recommend structural modifications when we observe the necessity.

Harborage Removal: The less shelter or nesting material that is available, the fewer number of pests that will be attracted to an area. We identify and recommend the removal of piles of debris, cutting tall weeds, and eliminating cardboard boxes in storage rooms, which are examples of harborage removal.

Habitat Modification: Changing the environmental conditions of a room or area so pests cannot survive there can be an effective long-term strategy. For example, a wet crawl space under a building can serve as a source of infestation for many pests. Installing ventilation and vapor barriers to dry out the crawl space dissuades most pests from living under the building. As conducive conditions are observed, we report them to the Agency.

Interception: When building occupants or workers examine goods and items for pests as they are brought onto the facility, they can often prevent numerous introductions of pests, especially German cockroaches. This is especially important for food items, in particular bagged or boxed trapping and monitoring: Rodents can be effectively controlled in many situations using traps alone. For insect control, traps work best for monitoring activity of insects and other arthropod pests. These techniques are used during our regular scheduled inspections where it is feasible to use traps.

Lighting: Exterior lights can attract large numbers of insects to buildings where they would then enter the structure. These insects also serve as food for spiders, which promotes spider infestations. Exterior lighting should always be changed to sodium vapor lamps where feasible to attract as few insects as possible to a building. During our regular inspections, we will note any recommended lighting alterations and report those back to the Agency.

Valley Pest Services, Inc. has gained a tremendous amount of experiences and *confidence* in the line of materials developed by EcoVia. These materials are made from food grade materials, are either low or non-toxic and have proven to be effective weapons against target pests named in this solicitation.

Some of these products, known as “Exempt”, do not even have an EPA number, because they are not considered a true “pesticide”. Because they work largely on nerve receptors

that insects have and that mammals do NOT have, they have no effect on people or pets. That's why, in sites identified in this pest group, the introduction of this technology would be especially well suited. These products are working well on many federal facilities and schools across the nation now. Valley Pest Services, Inc. looks forward to working with your staff to develop these fresh and advanced approaches, while at the same time, meeting your "Levels of Control".

Another new approach Valley Pest Services, Inc. is using is the Advion line of products from DuPont. These products have received the "Reduced Risk" label from EPA. This line of products works on an enzyme found only in insects. This line of products is completely safe for mammals, birds, fish and environment. In fact the first aid requirements for skin and eye contact, even ingestion are "*No first aid required*".

In addition to our IPM standards, Valley Pest Services, Inc. has an impeccable safety record. We have not had any reportable pesticide spills or OSHA violations in our 29 year history. Our safety program includes holding tailgate meetings at a minimum of once each week, distribution of safety fliers, annual safety training and respirator safety training by Target Specialty Products (our primary supplier of materials) and a driving safety series provided by Arthur J. Gallagher Insurance (our auto and pest control carrier). In addition, Dr. Austin Frishman PhD. is our Pest Control Entomologist on retainer for on-going pest control advisement, safety and technical training.

INTEGRATED PEST MANAGEMENT OVERVIEW

Ants

Non-chemical methods of control. The keys to success in pest management are, first, inspection to determine the nature and extent of the infestation, and, if at all possible, the location of the nest. Second, sanitation to eliminate readily available food and water. Third, the choice of right combination of tools, either non-chemical or chemical to eliminate the problem.

Habitat Modification. By trimming the branches of trees located close to structures, the branches do not act as runways from nest sites to building roofs. Altering landscaping can minimize the number of aphids and other honeydew-producing insects that attract ants. Moving trashcans is disruptive since ants often nest under objects. Conditions requiring habitat modification are reported during our inspections.

Chemical methods of control. The best baits for ants are those whose toxicant kills ants slowly. Worker ants live long enough to take the baits back to the nest and feed it to the colony and queen, thereby reducing the colony at its source. A variety of bait formulations are now available. Some are prepackaged in tamper-resistant bait stations. Formulations in gel, paste, or granule form are strategically placed in small amounts at a point of infestation.

Cockroaches

Non-chemical methods of control. The keys to success in pest management are first, inspection to determine the nature and extent of the infestation, second, sanitation to eliminate readily available food and water and third, the choice of the right combination of tools, either non-chemical or chemical to eliminate the problem.

Improved Sanitation. Roaches need food, water, and shelter survive. By limiting these three essentials, it is more difficult for roaches to live in the infested area. Simply by improving sanitation you can often suppress existing populations and discourage new invasions.

Food spills also feed roaches. Consistent cleaning will help to minimize roaches. Frequent vacuuming, sweeping, or mopping of floors and washing of counter and tabletops eliminates much of the food roaches may be foraging on. Trash should be stored away from infested areas and monitored for spills. We discuss and document sanitation issues during our inspections.

Roach-Proofing/Exclusion. Roaches can enter and move through a structure through innumerable tiny cracks and openings. Caulking and otherwise sealing cracks and crevices being used by roaches can often have great effect in suppressing the population. Many easy-to-use and effective silicon sealers and expandable caulk products have been recently developed, including some designed specifically for pest management. We perform exclusion as necessary on cracks and crevices and report other conditions requiring structural modification when identified.

Chemical methods of control. The judicious use of baits and bait stations are effective control measures when chemical control is needed. Baits and bait stations are placed in areas where roach activity has been identified.

Spiders

Non-chemical methods of control. Non-chemical control of spiders is performed by the removal of webbing via a vacuum or a de-webbing broom. Spiders are also controlled by controlling other species as the presence of spiders means there are other species of pest available for them to feed on.

Chemical methods of control. As de-webbing is the most effective method of spider control, chemical methods are only used in rare cases. Spiders are controlled as a secondary species when other pests are controlled via chemical method inside structures.

Other miscellaneous pest species such as beetles and crickets

Non-chemical methods of control. The methods involved in any Integrated Pest Management program can be used to manage multiple species. While pests are different in some ways, the protocols to prevent and manage infestations are consistent in many control processes. As with other species, non-chemical methods include improved sanitation, exclusion, and removal of harborage.

Improved Sanitation. Pests need food, water, and shelter to survive. By limiting these three essentials, it is more difficult for pests to live in the infested area. Simply by improving sanitation you can often suppress existing populations and discourage new invasions. Consistent cleaning will help to minimize pest infestations. Frequent vacuuming, sweeping, or mopping of floors and washing of counter and tabletops eliminates much of the food that pests may be foraging on. Trash should be stored away from infested areas and monitored for spills. We discuss and document sanitation issues during our inspections.

Lighting. For cricket control, the removal or changing the style of outside lights may prove very effective in controlling crickets. This control measure will be discussed with CE if we find conducive conditions.

Chemical methods of control. When chemical control is necessary for miscellaneous pest species such as beetles and crickets, and for that matter, any other pest that enters the building, small amounts of targeted pesticides are used, and only where the pests are seen inside or around the structures. By using a combination of Integrated Pest Management techniques and small applications of pesticides, control can be achieved. Excessive applications of pesticides are not necessary for an effective control program.

Bee, Wasp, Hornet, and Stinging Arthropod Control

Stinging arthropods such as bees, wasps, or hornets may cause a situation, which interferes with the mission of the facility and must be dealt with by utilizing quicker response times. Integrated Pest Management techniques may be used in some situations by removing nests or improving sanitation, which will remove food sources. In other cases, the key to effective control is with a product such as *Wasp Freeze*, which will provide a quick “knock down” of the infestation. We may use traps, which have pheromones inside. These swarm traps will be inspected on a regular basis. When bees are swarming, they are looking for a place to nest and are attracted to these swarm nests. Evidence of swarming activity will then initiate control measures.

As part of our regular inspections on all areas we will identify nests that are being constructed and will remove those as part of our IPM services. Stinging arthropod control will be an important area for Valley Pest Services, Inc. to provide a proactive control strategy. Should we receive a call, we will respond within four hours or immediately if there is a swarm and gain control within 24 hours.

Rodents – Mice and Rats

Mice are considered one of the most troublesome and economically important rodent categories in the United States. Mice live and thrive under a variety of conditions. They are found in and around homes and farms as well as in open fields and agricultural lands. Mice consume and contaminate food meant for humans, livestock, or other animals. They cause damage to structures and property, and they may transmit diseases. The deer mouse in particular, has been identified as the carrier of Hantavirus.

Non-chemical methods of control. Effective control involves three aspects: sanitation, exclusion and population reduction. The first two are useful as preventative measures. When a rodent infestation exists, some form of population reduction is almost always necessary.

Improved Sanitation. Rodents are attracted by food spills, open garbage, and food stored in accessible sites. Baiting and trapping programs often fail because the bait can't compete with the rodent's regular food. Reducing the rodent's food will reduce the capacity of the site to support the rodent, as well as making lethal control programs more effective.

Garbage provides a large food source for rodents. Regular trash pickups at the end of each day, rather than storing trash overnight, and the use of rodent-proof trash containers are relatively simple methods of reducing rodent food sources. Damaged dumpsters and containers should be repaired or replaced and should always be kept closed overnight. Staff eating at their desks should be kept to a minimum. Seeds, nuts, and snacks that are improperly stored or disposed of can provide ample food supply for a rodent.

All these sanitation issues are discussed and documented during our regular inspections.

Harborage Reduction. Landscaping should not include thick hedges or bushes, which obscure the ground. Ground covers such as ivy, which provide cover or runs for rodents, should not be placed adjacent to buildings. High grass, weeds, woodpiles, and construction debris should not be permitted near structures. Dumpsters and outside garbage containers should sit on a paved or concrete pad. Indoors, reduce clutter in rarely used rooms and organize storage areas. We note any harborage issues during our normal inspections.

Exclusion. A key point in our rodent control program is a thorough inspection of all buildings, both inside and out. As rodents can squeeze through a space as small as ¼", and they can build nests in crawl spaces, attics, walls, and other hidden areas, care should be taken to minimize the entry to the building from the outside as well as preventing the rodents from moving inside the structure if they do gain access. We perform exclusion as necessary on cracks and crevices and report other conditions requiring structural modification when identified.

Trapping. Trapping is an effective control method. It is our preferred method in structures where only a few rodents are present. Trapping has several advantages: 1) it is

an effective non-chemical method; 2) it permits confirmation that the rodent has been killed and 3) it allows for simple disposal of the rodent carcasses.

This simple wood-based snap trap is very effective. It can be baited with peanut butter, candy, dried fruit, or nuts tied securely to the trigger. The traps are set so that the trigger is sensitive and will spring easily.

Chemical methods of control

Rodent baits are placed inside tamper-proof rodent bait stations, which are then strategically placed, based on the knowledge of the rodent infestation. As with the snap traps, bait stations are placed along the walls and runways where rodents are known to travel.

Filth & Fruit Fly Control

Because of the environmental conditions flies are a major potential. High heat and high humidity quickly cause food spoilage. Because of this, exclusion and sanitation are key components we will be reviewing with all facility staff during our regular IPM inspections. Flies are one of the primary species that can be controlled by proactive actions of the staff in buildings.

Should a request be received beyond the scope of the firm fixed requirements, we will respond within two working days or less. Integrated Pest Management surveys are performed either on firm fixed requirement or indefinite quantity requirements so our procedures for performing an inspection are the same.

We will place fly traps as necessary and report on any sanitation issues we encounter. Fruit fly problems can be greatly reduced by the use of traps that work by using bait to attract the flies into a container. Two effective baits used are ripe banana and vinegar. Another type of trap used works by luring the flies through a funnel or similar “one-way” opening. Control of food sources is important. All counters should be kept free of food and food remnants. Food brought into buildings should be refrigerated or covered. Garbage should be sealed and emptied on a regular basis. Fruit should not be left out in the open. Chemical control will be performed on areas outside the facilities if flytraps and sanitation are not sufficient for control within two calendar days.

Survey for termite and wood-destroying Organisms

Our regular termite and wood destroying organism inspections shall include, but not be limited to, the following areas, if accessible and unobstructed: plumbing in bathrooms, kitchens, laundry rooms, or other areas; window and door frames and sills; baseboards, flooring, walls, and ceilings; entrance steps and porches; exterior of slab or foundation walls; crawl spaces to include support piers and beams, floor joists, sill plates, and foundation walls; fireplaces; and weep holes. Valley Pest Services, Inc. dba Pestmaster Services shall provide general structural floor plans of the first floor, crawl areas, and

basements, to include locations of foundations (footings), beams, piers, expansion joints, cracks in slabs, pipes which penetrate slabs or contact soil, all walls on slabs, and any other areas which may require termite treatment. The total linear feet for injecting and trenching, and the total square feet for rodding and broadcasting, shall be calculated and reported. Floor plans shall clearly identify the locations of previous and current pest activity and damage, areas where conditions are conducive to pest infestations, and locations, which, are inaccessible or are obstructed. We use Moisture Meters during our inspections to determine if there is excess moisture in the area, which is a condition that draws termites to a building.

Subterranean Termite Control

We have performed many treatments, during our prior and current contracts to correct termite infestations in structures on both facilities. A large part of the problem is building construction. Moisture conditions are present in a lot of the structures, which creates conducive conditions for subterranean termite infestations. As we do the scheduled inspections, we will note those showing excellent results in controlling termites in structures with high termite activity. Termidor is passed from one termite in the colony to others who then pass it to others – a process called transference.

Termites damage wooden structures and incidental wood in steel and concrete buildings, such as trim or molding, paneling, furring strips, or door and window frames. Files, stacked books, or any other cellulose material, such as fiberboard sheathing or insulation panels, may also be attacked. Most termite problems in large office buildings involve subterranean colonies that persist for years on buried scrap wood and constantly explore upwards for new sources of food. These colonies are often a nuisance because of the periodic emergence of large numbers of winged “swarmers” that find their way into occupied space. Swarming termites are controlled with a vacuum cleaner. A space spray may be unavoidable in rare circumstances. All comments describing ant swarming apply to swarming termites as well.

All termite infestations in the structure shall be controlled within 30 days of treatment. Toxicants shall be delivered to the project site in sealed and labeled containers as supplied by the manufacturer or formulator. Labels shall bear the manufacturer’s warnings to be observed in handling and use of material, and bear evidence or registration under the FIFRA. Our control methods will include:

- (a) Drill with Sub slab Injection and Soil Rodding. Termiticide shall be distributed evenly throughout the soil down to the top of all footings, including all exterior and interior walls with footings. Both sides of all basement walls with footings shall be treated. Spacing between injection points or rod holes shall not exceed 12 inches, unless this directly violates label directions. If this is the case, the KO shall be notified prior to work performance. Diluents shall not include any other pesticide residues or rinse water.

- (b) Trench and Excavation Technique. Soil adjacent to outside walls, and extending to the top of footings, shall be treated with a minimum of four gallons per ten linear feet per foot of depth and applied in a strip not less than six inches wide. One-third of the insecticide shall be applied in the bottom of the trench level with the top of the footings, one-third shall be applied when half of the backfill is placed, and the remainder when the trench is virtually filled. Backfill shall be tamped and sufficient in quantity to provide a surface sloping away from the structure. Where pavement abuts the building, treatment shall be applied to the soil along the entire length of this junction. Holes shall extend to foundation footings, and be spaced not more than 12 inches apart through expansion joints or through slabs within six inches of the foundation wall. Termiticide will be used at the rate of not less than four gallons per linear feet shall be applied through these holes.