Horticulture Diagnostic Laboratory

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Insect Traps and Barriers

Figure 1. A yellow sticky trap used for trapping insects such as aphids.

Figure 2. Looking down into a pitfall trap used to monitor black vine weevil. (Dept. of Entomology, Texas A&M University)

Insect traps and barriers are in widespread use, and have been on the market for many years. However, many misconceptions exist among home gardeners as to what, and what they will not do. This fact sheet categorizes traps as to type, and will help you decide whether the trap or barrier will be appropriate for use in your garden.

Mechanical Traps: Sticky traps (**Figure 1.**) for home gardens are one option. They may be purchased commercially, or they may be handmade. These traps have a sticky surface so that an insect or small animal encountering them will adhere to the surface. Sticky cards are available for monitoring such pests as whiteflies; when traps are properly placed, they may help reduce the population. Placement of the trap is important, as is renewing the sticky surface or discarding traps when they are full.

Pitfall traps (**Figure 2 & 3.**) are sometimes used to help detect and monitor crawling pests. A well-known trap of this type is the pie-tin-beer trap for slugs. *Home remedies** A small pan or tin is placed in the soil with its top flush with the soil surface. The pan is filled halfway with beer. Beer attracts slugs, which fall in and drown. A similar pit-fall trap has been used to monitor black vine weevil populations in nurseries and home landscapes.

Other traps employ such tactics as placing boards or grapefruit skins in gardens to provide hiding places for slugs and insects. Rolled up newspapers can serve as a similar device for catching earwigs. Pans with soapy water can be used for aphid monitoring and as an aid in control. These are often used with visual color lures.

Visual Lures: Visual lures are generally effective for a limited number of species. Light traps have been used for many years to monitor insects, helping us determine which are present and in what numbers. Unfortunately, light traps catch many types of insects, including both beneficial and damaging species. Some day-flying insects are attracted to specific colors. Colored traps can be coated with a sticky substance to capture these insects. Proper construction and placement of the traps are critical since they must present the proper appearance (visual image and/or color) to the targeted pest to be effective. Some visual traps that can provide partial control of insects when properly used include red sticky balls for apple maggot (**Figure 4.**), yellow sticky cards for aphids and whiteflies, and white cards for plant bugs. In addition, some visual traps are enhanced with chemical lures.

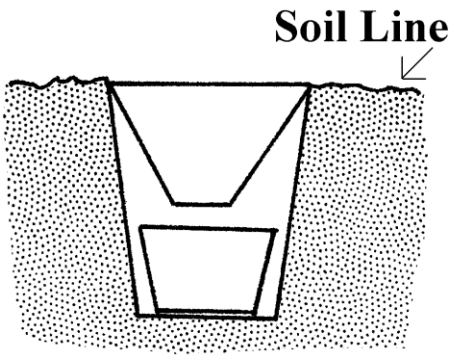

Figure 3. Illustration of a simple pitfall trap.

Figure 4. A red sticky ball trap for apple maggot control. (A. Merwin 1996)

Chemical Lures or Bait Traps

Pheromones are a well-known type of chemical lure. Pheromone traps utilize a sex attractant for the pest species. They are excellent monitoring devices, and several have been shown to provide control of certain species such as codling moth. Aggregation pheromones are used in traps to collect elm bark beetles.

Feeding attractants are also used to trap insects. Japanese beetle traps, which have been on the market for a number of years, often contain a feeding attractant; some also contain a sex pheromone. The effectiveness of the Japanese beetle trap as a control method continues to be investigated, and it is likely that they can protect small garden areas from too much damage if properly placed. Improper placement, however, can attract more hungry beetles to the garden area. Situate traps of this type well away from the garden, so beetles fly away from garden plants.

Synthetic apple volatile lures are available for use with apple maggot traps; they greatly increase the efficiency of the traps.

Barriers

Barriers are useful for preventing damage from certain pests. Unlike traps, they are used for blocking the feeding activity of the pests. Cutworm collars are valuable for reducing losses to transplanted tomatoes, peppers, broccoli, and related plants. They can be constructed of cardboard, metal, plastic or similar materials. They should be 4 inches tall, and placed firmly in the soil as soon as the crop is transplanted. The collars must be pushed down into the soil approximately one inch to be effective. Partial control of cabbage root maggot on transplanted crops can be achieved with tar paper shields. To make a shield, cut a round or square piece that is at least 6 inches across. Make a small hole in the center, cut a slit from the edge to the center, and fit the paper around the base of the stem; it should lie flush with the ground. This shield will serve as an egg laying barrier to the adult flies if it is placed promptly after transplanting and fitted snugly around the stem.

Row covers are used as barriers to some insects such as leafminers that attack beets, spinach, and Swiss chard. They can be effective as long as: 1) there are no gaps or tears in the materials; 2) the material is placed over the crop before or immediately upon crop emergence or transplanting; and 3) no hosts of the pest were grown on that site the previous year. If you use row covers to exclude pests such as striped cucumber beetles, remember that row covers exclude pollinating insects as well. Covers must be removed or opened up daily to allow for pollination. Commercial covers made of polypropylene, polyester, or polyvinyl alcohol are available, but cheesecloth or screening can also be used. These row covers let in light and water, and allow continued plant growth. Even ventilated plastic row covers can help keep out some pests.

Home Remedies: These remedies are not endorsements by Cornell University of any product or procedure. They are not recommendations for use either express or implied. Neither Cornell University, nor its employees or agents, are responsible for any injury or damage to person or property arising out of the use of this information.

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