What is a pesticide?
A pesticide is any substance or mixture of any substances used to prevent the development of, repel, destroy or kill a pest.

Some pesticides are classified as Restricted Use pesticides if there is a reason to believe that their use could harm humans, livestock, wildlife or the environment even when used according to their label directions. To apply these, a license is required. All other pesticides are classified as General Use pesticides and anyone can apply them according to their label directions.

Types of pesticides
Many types of pesticides are available to control pests. Some such as fumigants (gases) are nonspecific. They control a wide variety of pests such as insects, weeds, nematodes, and fungi in the application area. For example, an aerosol bomb will kill all insects in the room in which it is applied. Other pesticides are very selective, in that they may eliminate a pest only at a certain stage of its development or control only specific types of pests. For example, ovicides kill only the eggs of insects and will not harm the adult insect pests. Antimicrobial products (bactericides, biocides, disinfectants, and sanitizers) are another type of pesticide. These products are used to destroy or suppress the growth of harmful microorganisms such as bacteria, viruses, or fungi on inanimate objects and surfaces.

Common household pesticides
1. Cockroach sprays and baits
2. Insect repellents to repel mosquitoes and other biting insects
3. Rat and other rodent poisons
4. Flea and tick sprays, powders and pet collars
5. Kitchen, laundry, and bath disinfectants
6. Products that kill mold and mildew
7. Some lawn and garden products such as weed killers
8. Some swimming pool chemicals

Pesiticides in the Garden
According to the Environmental Protection Agency, 100 million pounds of active ingredients from herbicides, insecticides, miticides, and fungicides were applied in homes and gardens in the United States in 2001. This amount generated by homeowners is only a fraction of the total amount. If application of pesticides by professionals was included, the number would increase dramatically.

Pesticide Resistance
There is a potential for pesticide resistance associated with the use of many low-risk products. Pesticide resistance is related to the genetics of the pest and occurs when a pesticide product no longer has a negative effect on a pest. Many low-risk pesticides are prone to the development of pesticide resistance because they target a single mechanism in the pest, which can be overcome by a single mutation in the genes of the pest.

Pesticide resistance occurs by several different mechanisms depending on the characteristics of the pesticide product and the pest. A simple example of how the application of pesticide could result in the development of resistance is when a homeowner applies consecutive applications of a fungicide that disrupts a single mechanism in the fungal pest. Some individual fungi within the fungal population may possess a genetic variation that allows them to escape harm from the single-site fungicide. Consecutive applications of the fungicide eliminate those that are not resistant. As the resistant fungi continue to reproduce, a larger and larger percentage of the fungal population is resistant to the fungicide and the pest problem worsens.

Evaluate Pest Problems and Control Options
When evaluating potential pest problems in the home, garden and landscape, keep an open mind – pests are not the only cause of plant problems.

Abiotic, or nonliving, factors are also common causes of plant problems. Pests are not the only cause of plant problems. Abiotic factors, such as drought, poor soil conditions, mechanical injury, poor planting or chemical injury, might be involved. If you are considering a pesticide application in the home landscape, remember that pesticides should be the last line of defense and pesticides should be used only when alternative approaches cannot reduce the problem to an acceptable level. Be aware that there are no true “all purpose” pesticides. (One fungicide will not control all fungi, a single herbicide will not control all weeds and a insecticide or miticide will not control all insects and mites.)

Consider other factors to improve the health of your soil and plants, for example, using compost in your garden will improve the health of your soil. More nutrients will be available for your plants and in turn create stronger, healthier and more pest-resistant plants. If you don’t have a compost bin set up, EcoBio has compost workshops and information on how to get started with a compost bin or worm bin. Your local master gardeners can also be reached by phone to help you with questions regarding your garden.

Master Gardeners in San Luis Obispo: 2156 Sierra Way, Suite C  San Luis Obispo, CA 93401  (805) 781-5939 or (805) 781-1429
Email: mgsanluisobispo@ucdavis.edu
UC IPM Statewide program http://www.ipm.ucdavis.edu

Alternatives in Cleaning

Basic Ingredients for Non-toxic Cleaner Recipes
Five basic ingredients serve as the building blocks for many safe home cleaning needs:
2. Borax - Cleans and deodorizes. Excellent disinfectant. Softens water. Available in laundry section of grocery store or in pure form from chemical supply houses.
3. Soap - Biodegrades safely and completely and is non-toxic. Available in grocery stores and health food stores. Sold as liquid, flakes, powder or in bars. Bars can be grated to dissolve more easily in hot water. Insist on soap without synthetic scents, colors or other additives.
4. Washing Soda – Cuts grease and removes stains. Disinfects. Softens water. Available in laundry section of grocery store or in pure form from chemical supply houses as “sodium carbonate.”
5. White Vinegar or Lemon Juice – Cuts grease and freshens.

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