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INTEGRATED PEST MANAGEMENT

The most recent concepts of pest control emphasize integrating preventive management, alternative pest control measures, and chemical controls to deal with the wide variety of pest concerns associated with vegetable growing. Chemicals are used only when considered necessary and in limited concentrations, reducing disruptions of ecological balances.

Pest concerns often are specific to one type of vegetable or vegetable relatives. It is difficult to generalize about specific insect or disease concerns because each is distinctly different. Integrated pest management requires good knowledge of the pest, including the following factors:

* The pest's life cycle and dynamics of growth.
* Tolerance levels or how much damage can be tolerated.
* Other symptoms that may result.
* Other crops that may be damaged.
* Climate influences on the pest and control measures.

With knowledge of the pest, specific control measures can be determined. Chemical controls might be reserved for difficult-to-manage pests that can spread to many other plants. The following steps are suggested in applying the principles of integrated pest management for controlling insects and diseases.

* Grow resistant varieties or choose disease-free or treated seeds and plants.
* Inspect purchased plants carefully. Avoid diseased and injured plants. Many disease and insect symptoms can be present prior to setting the plants in the garden. Rely on reputable sources and avoid highly discounted plants and seeds of poor quality.
* Fertilize and water properly. Some symptoms may be due to fertilizer excesses or deficiencies. Water in moderation. Excess watering at critical times may intensify disease and insect injuries.
* Control weeds. Weeds can be hiding places for pests that may spread to garden plants.
* Mulch plants. Mulching improves root environments and evens out fluctuations in moisture supply, resulting in healthier plants. There may be a few instances where mulches provide hiding places for certain insects; however, the benefits of mulching certainly outweigh any concerns.
* Remove infested plants to prevent the spread of insects and diseases.
* Rotate. Certain disease and insect concerns can be reduced by moving to a new area of the garden. As a guideline, use a 3- to 4-year rotation. Don't plant the same crop or crop relative in the same location for 3-4 consecutive years.
* Be aware of situations you can tolerate versus those that require immediate attention. At the first sign of a symptom, make sure that you get it properly

identified. Consult a garden professional at your local garden center or Extension office if you need more information.
* Use pesticides as a last resort. Use specific pest control measures carefully and judiciously. Several general-use disease and insect control measures are available that provide effective control with little environmental disturbance. Always read the label carefully and follow directions for use.

* Apply pesticides properly for effective control. Thorough coverage of the plant surface usually is required. The use of a fine spray mist directed to all plant surfaces usually is the most effective way to ensure proper pesticide action while using or wasting as little material as possible. Any material used in excess or that does not cover the plant may become an environmental contaminant.

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