INTEGRATED PEST MANAGEMENT (IPM)

Soybean Pests

Overview

Integrated Pest Management, commonly known as IPM, is an approach to pest and disease management based on the knowledge of disease and pest life cycles and their interaction with the environment. It uses this knowledge to provide disease or pest control by the most economical means, and with the least possible hazard to people and the environment. IPM takes advantage of all appropriate pest management options, both preventative and curative.

IPM is not a single control method but, rather, an integrated approach to identifying and solving pest and disease problems. There are generally four main parts to an IPM approach:

Monitor and identify pests and diseases
Scouting fields regularly to identify and monitor pests and diseases, is a big part of IPM. Accurate and timely scouting helps you to identify potential problems before they become less manageable, and will probably prevent unnecessary pesticide treatments. The information recorded during scouting aids in the day-to-day decision-making process, especially when combined with knowledge of pest life cycles and crop development. The field data obtained during scouting is also extremely useful when planning for the next growing season.

Use action thresholds
Most growers know that the presence of a single pest does not always mean control is needed. Chemical controls should only be considered when insect populations or disease levels have reached or exceeded a level that will cause economic damage if left untreated. This is called the **economic injury level**, or **action threshold**. Commercial growers must weigh the costs of their pest management strategies against the potential economic impact of each pest. The **economic threshold** is a population level of the pest slightly below the economic injury threshold that allows sufficient lead time to implement control. Economic thresholds have been determined for many of the major pests and diseases of soybean.

Use prevention-based strategies
With IPM, pest management occurs from pre-plant to post-harvest and is prevention-based. This includes selecting disease-resistant or insect tolerant varieties, using cultural methods such as crop rotation; planting date; residue management, and good agronomic practices to encourage competitive crop growth. These control methods can be very effective and cost-efficient and present little to no risk to people or the environment.

Consider all available control options

Once scouting and action thresholds indicate that pest control is required, and preventive methods are no longer effective or available, IPM programs then evaluate the available control method both for effectiveness and risk. Effective, less risky pest controls are chosen first, including highly targeted chemicals, or mechanical control, such as trapping or rogueing. Broadcast spraying of non-specific pesticides is usually a last resort. Even when broadcast spraying is necessary, selection of products that are bee and beneficial pest friendly, and rotating modes of action to prevent resistance development in the pest, are best management practices.

IPM is an approach that changes with time as economic thresholds improve, new control strategies are developed, and more is learned about the crop, the pests, and the natural enemies that are present in each particular field. Integrated pest management can be seen as a continuum, and the goal is to move further along the continuum to using all appropriate and available strategies.

Recognize the symptoms of brown stem rot if it occurs, and use this information when planning next year’s crop.

Photo Credit: BSR-foliar-and-stem-symptoms-A. Sisson

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