

**MODEL INTEGRATED PEST MANAGEMENT (IPM)
PLAN FOR AGRISCIENCE PROGRAMS
IN MARYLAND PUBLIC SCHOOL DISTRICTS**

Pest Management Policy Statement For Agriscience Programs

The propagation and production of plants within a greenhouse environment is an important part of the educational curriculum for students enrolled in Agriscience Programs. Insect, mite and disease pests often infest plants causing significant damage. The control of pests and nutrients associated with horticultural crops is also a vital part of the educational curriculum within Agriscience Programs. Damage to plants resulting from these pests must be managed in order to instruct students in the management of horticultural crops in production greenhouses and to provide quality plants that can be marketed as part of school fund raising projects. The use of pesticides can pose risks through unnecessary exposures to people, property, and the environment. Risks can be kept to a minimum through proper selection and judicious use. Pest control within the Agriscience Program must protect the health and safety of the students, staff, and the environment while teaching students the principles of pest control and proper pesticide use for the production of quality greenhouse and nursery plants. It is therefore the recommendation of the County School District / Board of Education to adopt Integrated Pest Management (IPM) for the control of pests encountered within Agriscience Program and to incorporate the instruction of IPM as part of the curriculum.

Education

Agriscience Programs are designed to teach students about horticulture and to provide them with information on the fundamentals of plant growth and production. As part of the curriculum students will be taught basic IPM practices and principles and how IPM is used in the production and maintenance of horticultural crops. Students will also be instructed on the proper use of pesticides and how they may be used as part of an IPM program. Students will receive instruction in the identification and biology of common pests that may occur in horticultural crops grown as part of the Agriscience Program, the IPM policies and procedures to be used to achieve the desired pest management objectives, and will be informed of their role in meeting these objectives.

Roles and Responsibilities

The IPM program within the Agriscience Program will require the assistance and cooperation of the administration, designated Contact Person, Agriscience teachers and students. Agriscience teachers must work with the County School District's/Board of Education's designated Contact Person who serves as a liaison between the administration

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and pest control programs in order to provide oversight, consistency in pest control programs and ensure the provisions of the School District's IPM System and notification requirements are fulfilled. The Contact Person will advise Agriscience teachers of IPM program changes and new laws and regulations affecting the School District's IPM System and Agriscience IPM System.

The Agriscience teachers must remain in communication with the Contact Person since the Contact Person serves as the liaison between the school administration and parents, guardian, students and staff to address questions and concerns regarding the overall IPM system and pest control practices.

Agriscience teachers will comply with the provisions of the IPM system for Agriscience Programs by ensuring good sanitation practices are followed in conjunction with documenting areas requiring maintenance or repair. Teachers will keep the Contact Person apprised of activities within the Agriscience Program and pest problems encountered within the program. Copies of all pesticide labels and Material Safety Sheets (MSDS) that may potentially be used within the Agriscience Program will be provided to the Contact Person. Teachers will instruct students enrolled in Agriscience Programs in the principles of IPM in greenhouses and other related subject areas.

Students will comply with the provisions of the IPM system by ensuring that areas requiring maintenance or repair, sanitation problems and pest problems or sightings are documented. Students need to ensure good sanitation practices are followed.

Pests

Pests are populations of living organisms (insects, mites, weeds, or microorganisms) that interfere with the use of the school site for human purposes and in the production of plants. Strategies for managing pest populations will be influenced by specific crops and the pest species. IPM in greenhouse and other similar sites on the coordinated use of pest, fertility management, water management, other cultural practices and other environmental information in conjunction with the utilization of the best available pest management methods to prevent unacceptable levels of pest damage by the most economical means and with the least possible hazard to students, staff, property and the environment. Long-term control of pests is achieved by using information about the biology and habits of the pest and its interaction with its surroundings.

Pest Management

This Integrated Pest Management Plan for Agriscience Programs has been developed as a supplement to the School District's comprehensive IPM system as required by Maryland's *Regulations Pertaining To Integrated Pest Management and Notification of Pesticide Use in a Public School*. Pest management strategies will be developed for each discipline (e.g., greenhouses, nurseries, agriculture, landscaping) of the Agriscience Program and will include any proposed pest management measures.

Pests will be managed to:

- Minimize the loss or damage to plants and minimize the potential for a recurrence of the pest problem.
- Maintain a level of pest infestation or damage that will be acceptable for the marketability of the crop.
- Prevent pests from spreading to other parts of the school building and into the community, or areas beyond the site.
- Instruct students on the principles and practices of IPM and pest control procedures, including the proper use of pesticides.

Integrated Pest Management Procedures

IPM procedures will determine when to control pests, and identify conditions contributing to pest problems through the use of monitoring and thorough inspections conducted at regular intervals. Problem areas will be identified where alternative pest control techniques can be incorporated in order to eliminate routine pesticide applications. The necessity for pest control, if warranted, will be evaluated based on information obtained from a regular monitoring program that includes random foliage inspections of plants, inspections of the greenhouse, monitoring cards and sentinel plants. These actions will be based on action threshold levels that will be established based on the specific crop, developmental stage of the crop and the target pest. When pest control procedures are warranted, the utilization of one or more pest control methods including sanitation, modification of production procedures, cultural practices, mechanical procedures, use of biologicals, and pesticides will be considered.

IPM practitioners will depend on current, comprehensive information on the pest and its

environment and the best available pest control methods. By applying IPM principles, unacceptable levels of pest activity and damage will be suppressed by the most economical means while minimizing the risk to human health and the environment associated with pesticide applications. While the use of biologicals can play an important role in an IPM program designed for greenhouses and landscapes, the sole reliance on the use of biologicals to maintain pest levels is often not feasible. Due to the imprecise nature of biological insect populations and their interaction with pest populations, crops must be closely monitored. If appropriate action is not taken, which may include the use of selected biorational pesticides while populations are small, pesticides may have to be applied on a larger scale to maintain pest levels below damaging levels that may lead to the destruction of the crop.

It is the policy of this School District/Board of Education to utilize IPM principles within the Agriscience Program to manage pest populations adequately. The full range of pest control alternatives, including no action, will be considered. Selected non-chemical pest management methods will be implemented whenever possible to provide the desired control. The choice of using pesticides will be based on a review of all other available options and a determination that these options are unreasonable or have been exhausted, in order to minimize the use of pesticides. Cost or staffing considerations alone will not be adequate justification for the use of pesticides.

The management of algae and weeds within and around greenhouses is an important component of an IPM program in order to reduce or eliminate additional pest harborage and breeding sites. Weed control may involve the use of pesticides if nontoxic options are unreasonable or have been exhausted.

When it is determined that a pesticide must be used to meet vital pest management goals, the least hazardous pesticide will be selected. Only pesticides registered by the U.S. Environmental Protection Agency and the Maryland State Chemist may be applied. Applications will only be made to those plants or portions of plants that require treatment and during the growth stage of the pest when they will be most effective. The application of such pesticides are subject to the School District's/Board of Education's policies and procedures and all applicable state, federal and local regulations including the Maryland Pesticide Applicators Law and Regulations, and the Federal Insecticide, Fungicide, and Rodenticide Act.

Record Keeping

Information obtained from inspections and monitoring shall be maintained to verify the need

for treatments. This information should include the plant height and development, type of pest, population counts, presence and severity of disease, location of weeds and evaluation of previous control measures. The removal of infested plants or plant parts should be documented along with the modification of other cultural changes such as soil fertility and watering. Areas requiring maintenance or repair should be documented as part of the records along with copies of Work Order requests. Records of pesticide use shall be maintained by the certified applicator at the time of the pesticide application, comply with state record keeping requirements and will be maintained for two years. Records must be current and accurate.

Pesticide Purchase and Storage

Pesticide purchases should be limited to the smallest amount available or the amount that may be used during the year. Pesticides will be stored and disposed of in accordance with the pesticide product label directions and state regulations. Pesticides must be stored in an appropriate, secure site inaccessible to students or unauthorized personnel.

Pesticide Applications

Pesticides may be used after it is determined that nontoxic options are unreasonable or have been exhausted. The least hazardous pesticide will be selected and the method and time of application will be based on the goal to minimize the potential for exposure of students and staff to the pesticide. Applications will only be made to those plants or portions of plants, or areas, requiring treatment and during the growth stage of the pest when they will be most effective. Pesticide applications made as part of the Agriscience Program will be conducted by an individual certified as a pest control applicator in the Demonstration and Research Category of Pest Control (Category X), or by a registered employee/trained student working under the supervision of a certified applicator. Applicators must be trained in the principles and practices of IPM and the use of pesticides. Pesticide applications must follow state and federal pesticide regulations, label precautions and comply with this School District's Agriscience IPM Policy and Plan.

Program Evaluation

Evaluation of the pest control program is a critical component of an IPM program for the production of crops in greenhouses. IPM is a dynamic process and requires pest management strategies to be continually evaluated and modified as needed. Evaluation

of the crop production program and effectiveness of the pest control program should be made each time the crop is monitored. This will include the review of inspection reports, sanitation reports, fertilization and watering programs and other records to establish current conditions; progress of the program against pest problems and conditions, effectiveness of action thresholds, and to identify problem areas in the IPM system that may need to be modified or changed. Since the evaluation process is a critical component of an IPM program, students enrolled in the Agriscience Program should actively participate in the evaluation process to obtain a better understanding of the dynamics involved in an IPM program.

Notification

The Agriscience teacher will contact the School District's/Board of Education's designated Contact Person prior to any pesticide application. The School District/Board of Education will notify the school staff, students, parents and guardians prior to pesticide applications made in school buildings, including greenhouses, or on school grounds in accordance with Maryland regulations. Notices will be posted in designated areas at schools and sent home to parents and guardians of all elementary school students at the school in which the application was made and in middle schools and high schools to those individuals who wish to be informed in advance of pesticide applications and are on the pesticide notification list.

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