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IFAS EXTENSION

Management Practices to Protect Surface Water from Agricultural Pesticides ¹

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This document details the best ways to manage Florida's precious resource--surface water--from pesticides.

Background

Protection of water resources is a major concern for Floridians. Because reducing pesticide exposure to humans and wildlife is important in today's farming, there is a need for specific information on managing agricultural chemicals to minimize their potential to contaminate surface water. The following management practices will help to retain pesticides in target areas and keep them out of surface water resources.

Consider the Vulnerability of the Site

The slope of the field and the relative location of lakes, ponds, streams, canals, or wetlands to the application site determines the vulnerability of these surface water bodies to contamination from pesticides. Construct a berm or bank between the application site and surface water bodies to prevent or reduce the amount of water running off the field into the surface water following a heavy rainfall. Develop a buffer zone, such as a grass border,

between the field or the mixing and loading site and surface water-sensitive areas. Water should pass through a grass "filter" strip when draining off fields into canals or other water conveyances.

Read and Follow the Label

Read the label before you purchase, use, or dispose of a pesticide. You are required by law to follow label directions. Be aware of how your pesticide handling and application practices can impact surface water. Seek assistance, if you have questions or problems.

Use Integrated Pest Management (IPM)

IPM combines chemical, cultural, and biological control practices into one program to manage pest populations. Scout fields to identify pests, their population levels, and extent of damage. Make pesticide applications only when necessary, using the lowest rate required for adequate control. Minimizing the amount of pesticide used both reduces costs and protects the environment. For more information on IPM programs and practices, contact your IFAS Cooperative Extension Service county office.

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Keep Pesticide Applications on Target

Select nozzles and spray pressures that minimize small spray droplets. If using aerial application, when passing over surface water be sure the spray boom is turned off. Water in ditches, contaminated by off-target applications, may find its way into larger bodies of water, such as ponds, lakes, and large canals. In addition, field borders frequently contain habitat for wildlife and beneficial insects to live in and be protected from pesticide applications.

Consider Weather and Irrigation

Delay pesticide applications if heavy or sustained rain is anticipated. Do not apply pesticides before a scheduled irrigation, unless the product must be activated by moisture. Control the quantity of irrigation water to minimize pesticide runoff. Schedule applications when wind direction will not carry pesticide drift over surface water. Do not spray when the wind speed exceeds 10 mph--or as directed by the label

Measure Pesticides Carefully

Accurately calculate the amount of pesticide needed to treat the site to assure you are staying within the desired application rate. Careful calculations eliminate leftover spray mix and its disposal problems. Do not exceed label rate or number of applications per season.

Calibrate Sprayer

Calibrate application equipment frequently to assure that the desired rate of application is being applied. Check the equipment for leaks and malfunctions.

Mix and Load Carefully

Prevent spills at mixing and loading sites. If spills occur, follow appropriate spill containment procedures. Consult the label or contact the local Extension Office for cleanup procedures. If possible, mix and load on a permanent or portable containment pad to avoid saturating the soil with pesticide. Do not locate mixing and loading facilities where spills or runoff could contaminate surface water. Use a check valve or a 1/2 inch air gap between the end of the

water supply hose and the highest water level in the spray tank to prevent back-siphoning from the spray tank into surface water supplies. If surface water is used to fill a spray tank and is not protected by a berm to prevent runoff, fill the spray tank as far away as possible from the water source or fill the tank in the field from a nurse tank. Nurse tanks are used to transport clean water for mixing and loading. Do not leave the spray tank unattended when filling. Close the spray tank opening to prevent spills when transporting the sprayer to the field.

Store Pesticides Responsibly

Store pesticides in a facility with restricted access and away from all water sources. Use a facility with a concrete floor that has been sealed to facilitate clean-up in the event of a spill or leak. Inspect containers regularly for leaks and corrosion. Bulk pesticide storage tanks should be placed on concrete pads with dikes built around them to prevent the movement of pesticide should a spill or leak occur.

Dispose of Wastes Carefully

Follow the label when disposing of pesticides. Triple- or pressure-rinse empty pesticide containers. Apply excess spray mix as well as container and equipment rinse water to crops or sites listed on the label. Don't drain it on the ground. Avoid generating waste; purchase and mix only what is needed.