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Pesticide Management To Protect Water Quality Structural Controls And Land Management Strategies For Minimizing Pesticide Losses

Pesticides can be lost to water resources through runoff, run-in, or leaching. Pesticide molecules can be transported to waterways attached to soil particles and decaying plant residues or dissolved in runoff waters. Thus, structural controls and land management practices that reduce soil erosion and minimize runoff will also reduce the loss of field-applied pesticides.

Several common sense practices can go a long way toward preventing agricultural runoff from entering streams, lakes, rivers, and ponds. These tips are valuable throughout the growing season.

Structural Controls

Grass waterways and **grass or forage strips** in fields help retard the runoff of soil and agricultural chemicals into water supplies.

Terraces and other structures in large fields reduce soil erosion and pesticide losses by slowing water velocity and limiting runoff to shorter distances. Contouring alone or in combination with terracing improves the likelihood that pesticides will remain where applied.

Diversions reduce pesticide losses by directing runoff into stabilized areas and diverting overflow from impervious and chemically treated areas.

Sediment basins, farm ponds, and constructed wetlands trap sediments. Thus, chemicals in the sediment remain in the field or are trapped in biologically active areas like ponds or wetlands, which provide an opportunity for microorganisms to degrade the pesticides, eventually rendering them harmless.

Land Management Practices

Leave **unsprayed strips** and **buffer zones** around surface water supplies, active wells, abandoned wells, drainage ways, or irrigation ditches.

Use **contour farming** or **conservation tillage** on erodible lands to help keep runoff out of nearby water supplies.

Use **mulches** or **permanent vegetative strips** for erosion control on high value, low acreage specialty crops that require large rates of pesticides. These crops are sometimes grown on steep slopes where soils are highly susceptible to surface runoff and erosion.

Chisel plow and **subsoil** to shatter compacted soil layers or traffic pans that promote excessive runoff.

Plow **berms** around sinkholes to prevent surface runoff from entering water supplies.

Use **cover crops** and farming systems that build up soil organic matter and improve structure, thereby reducing erosion and runoff.

Shift high pesticide use crops to soils and fields that are less prone to erosion and excessive leaching.

Keep in mind that some practices are designed to reduce surface losses of pesticides from stormwater runoff by increasing infiltration and, thus, may accelerate leaching of certain pesticides to groundwater.

Local Natural Resources Conservation Service offices can recommend conservation farming practices to fit specific situations.

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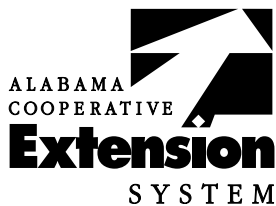
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For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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