

GEORGIA FARM*A*SYST



**FARM
ASSESSMENT
SYSTEM**

PESTICIDE STORAGE & HANDLING

Paul Sumner, Senior Public Service Associate
Adam Speir, Public Service Representative
Biological & Agricultural Engineering

PRE-ASSESSMENT:

Why Should I Be Concerned?

In certain areas of the country, pesticides are showing up where they are not wanted — in the drinking water. Fortunately, there are not widespread reports of pesticides occurring in Georgia drinking water. However, if pesticides are not handled carefully around the farm, they can seep through the ground after a leak or spill or they can enter a well directly during mixing and loading.

Pesticides play an important role in agriculture. They have increased farm production and have enabled farmers to manage more acres with less labor. Taking voluntary action to prevent potential pesticide contamination of ground water will help ensure their continued availability for responsible use by farmers.

Pesticides are toxic by nature and work by interfering with the life processes of plants and insects. Many pesticides can also be toxic to people. Pesticides entering a water supply in large quantities — which can happen with spills or back siphonage accidents — can produce acute health effects (toxic effects apparent after only a short period of exposure), which can range from moderate to severe, depending on the toxicity of the pesticide and the amount of exposure. Low-level contamination of ground water used for drinking water supplies or prolonged or repeated exposure to high doses of toxic substances can result in chronic health effects, which could be hazardous to people and livestock.

Pesticide concentrations found in water supplies are usually not high enough to cause acute health effects such as chemical burns, nausea and convulsions. Instead, these concentrations typically occur in trace levels, and the primary concern is related to long-term exposure (chronic health effects) through water use.

How Does This Assessment Help Protect Drinking Water and the Environment?

- This assessment allows you to evaluate the environmental soundness of your farm and operational practices relating to your pesticide storage and handling practices.
- This assessment asks a series of questions about your pesticide storage and handling practices.
- You are encouraged to work through the entire document.
- The assessment evaluation uses your answers (rankings) to identify practices or structures at risk that should be modified to prevent pollution.
- The pesticide facts provide an overview of sound environmental practices to prevent pollution.
- You are encouraged to develop an action plan based on your needs as identified by the assessment. The Pesticide Storage and Handling Facts, Contacts and References and Publications listing can provide alternatives to current practices.
- Farm*A*Syst is a voluntary program.
- You should conduct the assessment for your use. If needed, a professional from UGA Cooperative Extension or one of the other partnership organizations can provide assistance in completing the assessment or action plan.
- No information from this assessment needs to leave your farm.

ASSESSMENT:

Assessing Your Pesticide Storage and Handling Practices

For each category listed on the left, read across to the right and circle the statement that best describes conditions on your home and/or farm. If a category does not apply – for example, it asks about your sump and you don't have one – then simply skip the question. Once you have decided on the most appropriate answer, look above the description to find your rank number (4, 3, 2 or 1) and enter that number in the "RANK" column. The entire assessment should take less than 30 minutes. A glossary is on page 11 to clarify words found in italics throughout this assessment.

PESTICIDE STORAGE AND HANDLING					
	LOW RISK (rank 4)	LOW-MOD RISK (rank 3)	MOD-HIGH RISK (rank 2)	HIGH RISK (rank 1)	RANK
PESTICIDE STORAGE					
Amount stored	No pesticides stored.	Less than 1 gallon or less than 10 pounds.	More than 1 gallon but less than 55 gallons, OR more than 10 pounds but less than 550 pounds.	More than 55 gallons or more than 550 pounds.	
Leachability <i>(See the Pesticide Leachability Chart on Pages 12-17)</i>	No chemicals used.	All chemicals classified as having a low leachability factor.	Any chemicals classified as having a medium leachability factor.	Any chemicals classified as having a high leachability factor.	
Spill or leak control in storage areas	Impermeable surface (such as concrete) does not allow spills to soak into soil. Curb installed on floor to contain leaks and spills.	Impermeable surface with curb installed has some cracks, allowing spills to get to soil, OR impermeable surface without cracks has no curb installed.	Permeable surface (wooden floor) has some cracks OR impermeable surface with cracks and no curb. Spills could contaminate wood or soil.	Permeable surface (gravel or dirt floor). Spills could contaminate floor and underlying soil.	
Containers	Original containers clearly labeled. No holes, tears or weak seams.	Original containers old. Labels partially missing or hard to read.	<i>Containers old and deteriorating. Metal containers show signs of rusting.**</i>	<i>Containers have holes or tears that allow chemicals to leak. No labels.**</i>	
Security	Fenced or locked area separate from all other activities.	Fenced area separate from most other activities.	Open to activities that could damage containers or spill chemicals.	Open access to theft, vandalism and children.	

****These conditions are in violation of state and/or federal law**

PESTICIDE STORAGE AND HANDLING

	LOW RISK (rank 4)	LOW-MOD RISK (rank 3)	MOD-HIGH RISK (rank 2)	HIGH RISK (rank 1)	RANK
MIXING AND LOADING PRACTICES					
Location of well/ surface water in relation to mixing/loading area without a curbed containment pad	More than 100 feet down-slope from well/surface water.	Greater than 50 feet to 100 feet down-slope from well/surface water.	Greater than 10 feet to 50 feet down-slope from well/surface water OR greater than 100 feet up-slope from well/surface water.	Within 10 feet down-slope or within 100 feet up-slope from well/surface water.	
Mixing and loading pad spill containment	Concrete pad with curb keeps all spills contained and drains to sump.	Concrete pad with curb keeps all spills contained. No sump.	Concrete pad with some cracks keeps most spills contained. No curb or sump.	No mixing/loading pad or containment. Spills soak into ground or drain toward well.	
Sump	Continual removal of debris from sump.	Monthly removal of debris from sump.	Removal of debris from sump once or twice a year.	Sump full of leaves and other debris; never cleaned out.	
Backflow prevention on water supply for filling spray tanks	Anti-siphon device installed or hose kept above the tank opening to maintain an air gap between hose and tank.	Anti-siphon device installed. Hose in tank above water line.	No anti-siphon device. Hose in tank above water line.	No anti-siphon device. Hose in tank below water line.	
Water source	Separate water tank.	Hydrant away from well.	Hydrant near well.	Water taken directly from well or surface water.	
Supervision of spray tank filling	Remain at site until filling is complete.	Remain near site and check on filling frequently.	Leave site for short periods and check on filling every few minutes.	Start filling and leave site; check only when filling period is nearly completed.	
Handling system	Closed system (see glossary) for all liquid and dry product transfers.	Closed system for most liquids. Some liquid and dry product hand poured. Sprayer fill port easy to reach.	All liquids and dry products hand poured. Sprayer fill port easy to reach.	All liquids and dry products hand poured. Sprayer fill port hard to reach.	
Sprayer cleaning and rinsate (rinse water) disposal when sprayer rinsing is necessary	Sprayer washed out in field and rinsate collected to be used in next load and applied to labeled crop.	Sprayer washed out on pad at farm. Rinsate used in next load and applied to labeled crop.	Sprayer washed out at farm. Rinsate sprayed less than 100 feet from well.	Sprayer washed out at farm. Rinsate dumped at farm or in field less than 50 feet from well.	

PESTICIDE STORAGE AND HANDLING					
	LOW RISK (rank 4)	LOW-MOD RISK (rank 3)	MOD-HIGH RISK (rank 2)	HIGH RISK (rank 1)	RANK
CONTAINER DISPOSAL					
Disposal location	All triple-rinsed containers are collected for recycling. Take all other properly rinsed containers to an approved landfill. ¹			<i>Bury or burn plastic or paper containers on farm. ^{**2}</i>	

****These conditions are in violation of state and/or federal law**

Number of Areas Ranked _____

(Number of questions answered, if all answered, should total 14.)

Ranking Total _____

(Sum of all numbers in the "RANK" Column)

¹ Farmers may have the option to dispose of empty pesticide containers in a licensed landfill. The pesticide label will also have additional disposal instructions and options.

² Burning or burying pesticide containers is not permitted in Georgia. Quantities of buried containers (even though empty and rinsed) may be a liability if the property owner wants to sell or mortgage the property. Often, environmental audits are required when such transactions occur. If such burial sites are found, the property owner may be required to clean them up and could be cited for violating the Georgia Pesticide Use and Application Act of 1976. Burning of containers or bags releases harmful particulates into the atmosphere that can settle on crops or water sources.

ASSESSMENT EVALUATION:

What Do I Do with These Rankings?

STEP 1: Identify Areas Determined to be at Risk

Low-risk practices (4s) are ideal and should be your goal. Low- to moderate-risk practices (3s) provide reasonable protection. Moderate- to high-risk practices (2s) provide inadequate protection in many circumstances. High-risk practices (1s) are inadequate and pose a high risk for causing environmental, health, economic or regulatory problems.

High-risk practices (rankings of “1”) require immediate attention. Some practices may require little effort to correct, while others could be major or costly and may require planning or prioritizing before you take action. All activities identified as “high-risk” or “1s” should now be listed in the action plan. Rankings of “2s” should be examined in greater detail to determine the exact level of risk and attention should be given accordingly.

STEP 2: Determine Your Pesticide Risk Ranking

The Risk Ranking provides a general idea of how your pesticide storage and handling practices might be affecting your ground and surface water, contaminating your soil and affecting your air quality.

Use the rankings total and the total number of areas ranked to determine the Pesticide Risk Ranking.

RANKING TOTAL	÷	TOTAL NUMBER OF AREAS RANKED	=	PESTICIDE RISK RANKING
_____	÷	_____	=	_____

PESTICIDE RISK RANKING.....	LEVEL OF RISK
3.6 to 4	Low Risk
2.6 to 3.5	Low to Moderate Risk
1.6 to 2.5	Moderate Risk
1.0 to 1.5	High Risk

This ranking should serve only as a general guide, and not as a precise diagnosis since it represents the average of many individual rankings.

STEP 3: Read the Section on Improving Your Pesticide Storage and Handling Practices

While reading, think about how you could modify your practices to address some of your moderate and high-risk areas. If you have any questions that are not addressed in the “pesticide facts” portion of this assessment, consult the references or contact your county Extension agent for more information.

STEP 4: Transfer Information to the Total Farm Assessment

If you are completing this assessment as part of a “Total Farm Assessment,” transfer your fertilizer risk ranking and your identified high-risk practices to the overall farm assessment.

PESTICIDE FACTS:

Improving Pesticide Storage and Handling

We will look at five different areas of pesticide management on your farm:

- Pesticide Storage Practices
- Mixing and Loading Practices
- Spill Cleanup
- Container Disposal Practices
- Other Management Factors

When handling pesticides, wear proper protective clothing as listed on the pesticide product label at all times. Personal protection is important but not addressed in Farm*A*Syst, which focuses on environmental protection. The “Contacts and References” section on page 16 provides some safety information sources.

PESTICIDE STORAGE PRACTICES

If stored safely in a secure location, pesticides pose little risk to ground water. Common sense suggests keeping pesticides dry and out of the way of activities that might knock over a jug or rip open a bag. Short-term storage (during seasonal use) in a temporary location poses a higher risk than year-round storage in a permanent facility with adequate precautions, but any storage, regardless of length of time stored, poses a risk to ground water.

If a spill does occur, an impermeable (waterproof) floor, such as concrete, should virtually prevent seepage of chemicals into the ground. A 4-inch curb around the floor prevents most chemical spills from spreading to other areas.

Secondary containment provides an impermeable floor and walls around the storage area. This minimizes the amount of pesticide seeping into the ground if a bulk liquid pesticide storage tank should leak. A mixing/loading pad provides for secondary containment during the transfer of pesticides to spraying equipment or nurse tanks.

Building a Storage Facility

Building a new storage facility just for pesticide storage may be expensive, but generally is safer than modifying areas meant for other purposes.

When building a new facility, keep in mind a few principles of safe pesticide storage:

- Locate the building down-slope and at least 100 feet away from your well or surface water. The distance from the well or surface water should be greater if the site has sandy soil.
- The risk of pesticide contamination of ground water is influenced by properties of both the pesticide chemical and soil type.
- In the event of a fire, contaminated surface water should drain into a confined area.
- The mixing and loading area should be close to your storage facility to minimize the distance that chemicals are carried.

- The building foundation or secondary containment floor should be well drained and high above the water table. The finished grade should be 3 inches below the floor and sloped to provide surface drainage away from the building.
- Provide pallets to keep large drums or bags off the floor. Shelves for smaller containers should have a lip to keep containers from sliding off. Steel shelves are easier to clean than wood if a spill occurs. Store dry products above liquids to prevent wetting from spills.
- If you plan to store chemicals in large bulk tanks, provide a containment area large enough to confine 125 percent of the contents of the largest bulk container, plus the displaced volume of any other storage tanks in the area.
- A locked storage cabinet or building provides security. Preventing unauthorized use of pesticides reduces the chance of accidental spills or theft. Provide signs or labels identifying the cabinet or building as a pesticide storage area. Labels on the outside of the building give firefighters information about pesticides during an emergency response for fire or a spill.
- Provide adequate road access for deliveries and emergency equipment.
- Keep pesticides separate to prevent cross-contamination. Keep herbicides, insecticides and fungicides on separate shelves or in different areas.

Contact your county Extension office for other information to consider in the design of a storage facility, such as ventilation, water access, temperature control and worker safety.

Modifying an Existing Storage Facility

If you decide to improve your current storage building, applying the above principles can be expensive. Compared to the cost of a major accident or a lawsuit, however, storage improvements are a bargain.

The cheapest alternative you may have is to cut back on the amounts and types of pesticides stored. If that's not practical, consider how you can protect the pesticides you keep in storage. Sound containers are your first defense against a spill or leak and can save you money by preventing pesticide loss.

If a container is accidentally ripped open or knocked off a shelf, confine the spill to the immediate area and clean up promptly. The building should have a solid floor and, for liquid pesticides, a curb. The secondary containment space should be large enough to hold 125 percent of the contents of the largest full container, plus the displaced volume of any other storage tanks in the area.

It may be less expensive to remodel an existing structure that serves other uses than to build a new facility, even though remodeling can be complicated. When existing buildings must accommodate other activities, using them to store pesticides could compromise the safety of people and the environment. Storing chemicals in a separate facility reduces the risk associated with fire or accidental spills.

**Never Store Pesticides Inside or Near a Well or
Water Supply Structure.**

Anticipate Emergencies

You can reduce the degree of damage by anticipating emergencies. Fires in a storage area present a special hazard to people and the environment. If containers are damaged, the stored chemicals may be carried away by water and spread over a large area.

Label windows and doors to alert firefighters to the presence of pesticides and other products stored in the structure. It's a good idea to keep a separate list of the chemicals and amounts stored. Keep a copy of the list in the house or away from the storage area. You should also keep MSDS information away from the storage structure for access to emergency personnel and inspectors.

If a fire should occur, consider where the surface runoff water will go and where it might collect. For example, a curb around a floor can help confine contaminated water.

In making the storage area secure, also make it accessible for getting chemicals out in a hurry.

MIXING AND LOADING PRACTICES

Ground water contamination can even result from small spills in the mixing and loading area. Small quantities spilled regularly in the same place can go unnoticed, but the chemicals can build up in the soil and eventually reach ground water. By mixing and loading on an impermeable surface, such as sealed concrete, you can contain and reuse most spilled pesticides.

A Mixing and Loading Pad

Containing pesticide spills and leaks requires an impermeable (waterproof) surface for mixing and loading. The pad should be large enough to contain leaks from bulk tanks, wash water from cleaning equipment, and spills from transferring chemicals to the sprayer or spreader.

The size of the pad also depends on the equipment you use. It should provide space around the parked equipment for washing and rinsing. Having several separate rinsate (rinse water) storage tanks allows you to keep rinsate from different chemicals separate. That way, it can be used as mixing water on subsequent loads.

Locate the pad next to the storage area. There must be NO runoff. Runoff can be a violation of federal laws (the Clean Water Act, FIFRA, or RCRA). A roof or other rainfall protection is essential.

If you consider constructing a mixing and loading pad, contact your county Extension office.

Better Management on Your Existing Mixing and Loading Site

Spills and leaks are likely to occur from time to time. Even if you don't have an impermeable mixing and loading pad, you can minimize contamination by following these basic guidelines:

- Avoid mixing and loading pesticides near your well or surface water. One way to do this is to use a nurse tank to transport water to the mixing and loading site. Ideally, the mixing site should be moved each year within the field of application.
- Avoid mixing and loading on gravel driveways or other surfaces that allow spills to sink quickly through the soil. A clay surface is better than sand.

- Install a back siphon prevention device on the well or hydrants to prevent reverse flow of liquids into the water supply. Never put the hose in the sprayer tank. Provide an air gap of 6 inches between the hose and the top of the sprayer tank.
- Always supervise sprayer filling. For restricted use pesticides, a trained and certified applicator must supervise operations.
- Consider a back siphonage that transfers the pesticide directly from the storage container to applicator equipment (through a hose, for example). With this system, humans and the environment are never inadvertently exposed.
- Use rinsate for mixing subsequent loads. Spray the last rinsate load on the labeled crop.

Spill Cleanup Procedures

For dry spills, promptly sweep up and reuse the pesticide as it was intended. Dry spills are usually very easy to clean.

For liquid spills, first stop the leakage, and then recover as much of the spill as possible and reuse as it was intended. Spills on impermeable surfaces may be cleaned up with an absorbent material such as kitty litter or sawdust. This material should then be spread over a site specified on the pesticide label. If soil contamination occurs on a permeable surface, it may be necessary to remove and field-apply some contaminated soil.

Have an emergency response plan for the site. Know where the runoff water will go, how to handle your particular chemicals and whom to call for help.

**To Report a Spill, Call the Georgia Department of
Natural Resources at 1-800-241-4113.**

CONTAINER DISPOSAL PRACTICES

Unwashed and improperly stored containers can lead to ground water contamination by allowing chemical residues to leak into the ground.

Some basic guidelines can help avoid problems:

- As often as possible, use returnable containers and mini-bulks and return them to the dealer.
- Pressure-rinse or triple-rinse plastic containers immediately after use, since residue can be difficult to remove after it dries. Pour rinse water into the spray tank. Puncture containers and store them in a covered area until you can take them to a permitted landfill or to be recycled.
- Recycle plastic and metal containers whenever possible.
- Shake out bags, bind or wrap them to minimize dust and take them to a permitted landfill.
- Do not bury or burn pesticide containers or bags.

Your drinking water is least likely to be contaminated if you follow appropriate management procedures or dispose of waste at a location off the farm. Proper off-site disposal practices are essential to avoid risking contamination that could affect the water supplies and health of others.

OTHER MANAGEMENT PRACTICES

Reducing pesticide waste makes financial as well as environmental sense, but it means more than just reducing spills. It also means not buying more than you need to apply, keeping records of what you have on hand, and using older products first.

- Buying only what you need makes long-term storage unnecessary. In addition, you avoid cold or hot weather problems that can make some pesticides useless.
- Record keeping may seem to be a task unrelated to ground water contamination, but knowing what you've used in the past and what you have on hand allows you to make better purchasing decisions.
- Keep records of past field application rates and their effectiveness. Along with field records, you can add information such as the manufacturer's name and address, chemical types and handling precautions. This information can be important if you must respond quickly to an accident.
- Using older products first keeps your inventory current and effective. Before using chemicals that have been stored for a few years, check with your county Extension agent about possible restrictions on their use.

GLOSSARY:

Pesticide Storage and Handling

Air Gap: An air space (open space) between the hose or faucet and water level, representing one way to prevent backflow of liquids into a well or water supply.

Anti-siphon device: A safety device used to prevent backflow of a mixture of water and chemicals into the water supply.

Backflow: The unwanted reverse flow of liquids in a piping system.

Closed handling system: A system for transferring pesticides or fertilizer directly from a storage container to applicator equipment (through a hose, for example), so that humans and the environment are never inadvertently exposed to the chemicals.

Milligrams per liter (mg/l): The weight of a substance measured in milligrams contained in 1 liter. It is equivalent to one part per million in water measure.

Parts per million (ppm): A measurement of concentration of one unit of material dispersed in one million units of another.

Secondary containment: Impermeable floor and walls around a fertilizer or chemical storage area that minimize the amount of fertilizer or chemical seeping into the ground from a spill or leak.

NOTES:

TABLE 1. PESTICIDE LEACHABILITY CHART

Use this table to determine your chemical leachability risk (page 2). This list is not intended to cover all chemicals registered for use. Information on other chemicals can be found at the Georgia Department of Agriculture or <http://www.kellysolutions.com/GA/PesticideIndex.htm>

HERBICIDES		
BRAND NAME	COMMON NAME	RATING
2 Plus 2	mecoprop amine salt 2,4-D dimethylamine	high
2,4-D amine	2,4-D dimethylamine	high
2,4-D esters	2,4-D esters	high
AAtrex	atrazine	high
Assure	quizalofop ethyl	high
Asulox	asulam sodium salt	high
Atrazine	atrazine	high
Atrazine	atrazine	high
Balan	benefin	low
Banvel	dicamba salt	high
Basagran	bentazon sodium salt	high
Betasan	bensulide	high
Bicep	atrazine + metolachlor	high
Blazer	acifluorfen	high
Bronate	MCPA acid + bromoxynil	high
Bronco	alachlor + glyphosate amine salt	medium
Buctril	bromoxynil octanoate ester	low
Bueno	MSMA sodium salt	medium
Butoxone	2,4-DB dimethylamine	high
Butyrac	2,4-DB	low
Butyrac 200 dimethylamine	2,4-DB	high
Caliber 90	simazine	high
Canopy	chlorimuron ethyl + metribuzine	high
Caparol	prometryn	medium
Casoron	dichlobenil	high
Classic	chlorimuron ethyl	high
Cobra	lactofen	low
Command	clomazone	medium
Cotoran	fluometuron	high
Crabgrass Preventer	benefin	low
Crossbow	2,4-D + triclopyr ester	high
Curbit	ethalfuralin	low
DMA	2,4-D dimethylamine	high
DMC Weed Control	metsulfuron-methyl	high
Dacthal	DCPA	medium
Devrinol	napropamide	high
Diquat	diquat dibromide salt	low
Direx	diuron	high

BRAND NAME	COMMON NAME	RATING
Drexel Diuron	diuron	high
Dual	metolachlor	high
Eptam	EPTC	medium
Eradicane	EPTC	medium
Evik	ametryn	high
Formula	2,4-D dimethylamine	high
Fusilade 2000	fluazifop-P-butyl	low
Fusilade 2000	fluazifop-butyl	low
Gallery	isoxaben	medium
Gemini	chlorimuron ethyl + linuron	high
Goal	oxyfluorfen	low
Gramaxone	paraquat dichloride	low
Halts Herbicide II	bensulide + pendimethalin	high
Hoelon	diclofop-methyl	low
Hyvar L	bromacil lithium salt	high
Hyvar X	bromacil acid	high
Illoxan	diclofop-methyl	low
Image	imazaquin ammonium salt	high
Karmex	diuron	high
Kerb	pronamide	medium
Krovar I	bromacil acid + diuron	high
Lasso	alachlor	medium
Lesco	2,4-D dimethylamine	high
Linex	linuron	high
Lorox	linuron	high
MSMA	MSMA sodium salt	medium
Mecomec	mecoprop amine salt	high
Ornamec	fluazifop-butyl	low
Paraquat	paraquat dichloride	low
Pennant	metolachlor	high
Poast	sethoxydim	medium
Pre-M	pendimethalin	low
Prefar	bensulide	high
Presan	bensulide	high
Princep	simazine	high
Prowl	pendimethalin	low
Reflex	fomesafen sodium salt	high
Rescue	2,4-DB dimethylamine + naptalam sodium salt	high
Rhonox	MCPA soluble salt	high
Ronstar	oxadiazon	low
Ronstar G	oxadiazon	low
Roundup	glyphosphate amine salt	low

BRAND NAME	COMMON NAME	RATING
Scepter	imazaquin acid	high
Simazine	simazine	high
Sinbar	terbacil	high
Solicam	norflurazon	medium
Storm	acifluorfen + bentazon	high
Super Trimec	2,4-acid + dicamba salt + dichlorprop ester	high
Surflan	oryzalin	medium
Tackle	acifluorfen sodium salt	high
Trimec	2,4-D dimethylamine + dicamba salt + mecoprop amine salt	high
Turflon II Amine	2,4-D dimethylamine + mecoprop amine salt	high
Turflon	2,4-D acid + 2,4-D esters/ amines + trichlopyr amine salt	high
Vantage	sethoxydim	medium
Velpar	hexazinone	high
Weedar	2,4-D dimethylamine	high
Weedmaster	dicamba salt + 2,4-D dimethylamine	high
Weedone	2,4-D dimethylamine + MCPA ester	high
XL	benefin + oryzalin	medium
Zorial	norflurazon	medium

INSECTICIDES/MITICIDES

BRAND NAME	COMMON NAME	RATING
AG 500	diazinon	medium
Ambush	permethrin	low
Amdro Bait	hydramethylnon	low
Ammo	cypermethrin	low
Apollo	clofentezine	low
Aqua	parathion	low
Asana	esfenvalerate	low
Bidrin	dicrotophos	high
Capture	bifenthrin	low
Carbaryl	carbaryl	high
Counter	terbufos	low
Deadline	metaldehyde	medium
Dicofol 4 EC	dicofol	low
Dimethoate	dimethoate	high
Dimilin	diflubenzuron	low
Di-Syston	disulfoton	high
Dursban	chlorpyrifos	low

BRAND NAME	COMMON NAME	RATING
Cycarb	bendiocarb	low
Furadan	carbofuran	high
Furadan 4F	carbofuran	high
Guthion	azinphos-methyl	low
Hopkins	parathion	low
Imidan	phosmet	high
Isotox	lindane	high
Karate	lambda-cyhalothrin	low
Lannate	methomyl	high
Lannate L	mathomyl	high
Larvae	methoxychlor	low
Larvin	thiodicarb	medium
Lintox	lindane	high
Lorsban	chlorpyrifos	low
Malathion	malathion	low
Mavrik	fluvalinate	low
Mesurol	methiocarb	high
Metaldehyde	metaldehyde	medium
Mocap	ethoprop	high
Monitor	methamidophos	high
Nemacur	fenamiphos	high
Omite	propargite	low
Orbit	propiconazole	high
Orthene	acephate	high
Parathion	methyl parathion	low
Penncap M	methyl parathion	low
Pounce	permethrin	low
Pyrenone	permethrin	low
Reldan	chlorpyrifos	low
Savey	hexythiazox	low
Scout	tralomethrin	low
Sevin	carbaryl	medium
Spectracide	diazinon	medium
Supracide	methamidophos	high
Swat	phosphamidon	high
Talstar	bifenthrin	low
Tame	fenpropathrin	low
Target	cyromazine	high
Temik	aldicarb	high
Tempo	cyfluthrin	low
Thimet	phorate	medium
Thiodan	endosulfan	low
Triumph	isazofos	high
Vendex	fenbutatinoxide	medium
Vydate	oxamyl	high
Wofatox	methyl parathion	low

FUNGICIDES		
BRAND NAME	COMMON NAME	RATING
Aliette	fosetyl-aluminum	low
Apron	metalaxyl	high
Banner	propiconazole	high
Banol	propamocarb	low
Banrot	etr Diazole + thiophanate-methyl	high
Bayleton	triadimefon	medium
Bravo	chlorothalonil	medium
Captan	captan	low
Captec	captan	low
Chipco 26019	iprodione	low
Chloroneb	chloroneb	medium
Dithane	mancozeb	medium
Exotherm Termil	chlorothalonil	medium
Fore	mancozeb	medium
Formec	mancozeb	medium
Funginex	triforine	medium
Fungo	thiophanate-methyl	low
Fungo Flo	thiophanate-methyl	low
Koban	etr Diazole	high
Lesco Twosome	chlorothalonil + fenarimol	high
Maneb	maneb	medium
Maneb Plus Zinc F-4	maneb + zinc	medium
Manzate	mancozeb	medium
Mertect	thiabendazole	high
Nova	myclobutanil	high
Orbit	propiconazole	high
Penncozeb	mancozeb	medium
Pipron	piperalin	low
Polyram	metiram	low
Ridomil	metalaxyl	high
Ronilan	vinclozolin	high
Rovral	iprodione	low
Rubigan	fenarimol	high
Spotrete	thiram	medium
Subdue	metalaxyl	high
Terraclor	PCMB	low
Terraguard	triflumizole	high

BRAND NAME	COMMON NAME	RATING
Terrazole	etr Diazole	high
Thiram	thiram	medium
Tilt	propiconazole	high
Topsin	thiophanate-methyl	low
Topsin M	thiophanate-methyl	low
Truban	etr Diazole	high
Vitavax	carboxin	low
Ziram	ziram	medium
Zyban	mancozeb + thiophanate-methyl	medium
NEMATICIDES		
Basamid	dazomet	high
Counter	terbufos	low
Furadan	carbofuran	high
Mocap	ethoprop	high
Nemacur	fenamiphos	high
Oxamyl	oxamyl	high
Temik	aldicarb	high
Vydate	oxamyl	high
Brom-O-Gas	methyl bromide	high
Busan	metham sodium salt	high
Chloro-o-Pic	chloropicrin	low
MBC-33	chloropicrin + methyl bromide	high
Metho-o-Gas	methyl bromide	high
MethylBromide	methyl bromide	high
Telone C-17	1,3-dichloropropene + chloropicrin	high
Telone II	1,3-dichloropropene	high
Terr-o-Gas	chloropicrin + methyl bromide	high
Vapam	metham sodium salt	high

ACTION PLAN:

An action plan is a tool that allows you to take the needed steps to modify the areas of concern as identified by your assessment. The outline provided below is a basic guide for developing an action plan. Expand your plan if you feel the need to include detail or additional areas. Consult the list of references on the next page if additional assistance is needed to develop a detailed action plan.

Area of Concern	Risk Ranking	Planned Action to Address Concern	Time Frame	Estimated Cost

REFERENCES:

CONTACTS AND REFERENCES			
Organization	Responsibilities	Address	Phone Number/ Website
Poison Control Centers	Questions regarding the ingestion of or a physical reaction to a pesticide.	Human Poison Control ----- Animal Poison Control	800-222-1222 www.aapcc.org ----- 888-426-4435 www.aspca.org
Georgia Department of Agriculture	To report a spill or ask questions about container recycling and disposal.	Pesticide Division Capitol Square, Suite 550 Agricultural Building Atlanta, GA 30334	800-282-5852 www.agr.georgia.gov
U.S. EPA	RCRA, CERCLA (Superfund), and EPCRA ¹ hotline. (See bottom of page)	1725 Jefferson Davis Hwy. Crystal Square 2 Arlington, VA 22001	800-424-9346 www.epa.gov
Kelly Registration Systems, Inc.	Database of registration information for pesticides, restricted use dealers, certification, and contractors.	10115 Hwy 142 N Covington, GA 30014	www.kellysolutions.com/ga
Biological & Agricultural Engineering Dept., University of Georgia	Design of fertilizer storage, mixing, loading facilities and sprayer calibration.	University of Georgia Driftmier Engineering Center Athens, GA 30602	706-542-9067 www.engr.uga.edu
County Extension-UGA	Information about storage and hazardous waste management.	Local County Extension Office	1-800-ASK-UGA1. www.ugaextension.com
U.S. Ag Recycling	Information on pesticide container recycling program.	USAg Recycling 18330 Penick Rd. Waller, TX 77484	800-654-3145 www.usagrecycling.com

1. RCRA (Resource Conservation and Recovery Act), Super Fund and EPCRA (Emergency Planning and Right to Know Act) Hotline

PUBLICATIONS:

**University of Georgia, Cooperative Extension
Athens, GA 30602**

- Georgia Pest Management Handbook (Commercial and Homeowner Edition)
- Pesticide Storage and Mixing Facilities, Bulletin No. 1095
- Handling of Used Agricultural Chemical Containers (*In Review*)

The following publications can be purchased from the University of Georgia:

- Agricultural Plant Pest Control
- Apply Pesticides Correctly
- Forest Pest Control
- Right-of-Way Pest Control
- Aquatic Pest Control

**State Soil and Water Conservation Commission
P.O. Box 8024
Athens, GA 30603**

- Best Management Practices for Georgia Agriculture

*The Georgia Farm Assessment System is a cooperative project
of the Sustainability Division, Georgia Department of Natural Resources,
the University of Georgia, College of Agricultural and Environmental Sciences, Cooperative Extension,
the State Soil and Water Conservation Commission and the
USDA, Natural Resources Conservation Service.*



This publication is an adaptation of the Florida Farm*A*Syst, Pesticide Storage and Handling Fact Sheets and Work Sheets (revised from the Wisconsin and Minnesota prototype versions), authors: T.W. Dean, UF/IFAS Pesticide Information Office.

The Sustainability Division and all technical sources referenced in this assessment make no warranty or representation, expressed or implied, with respect to the information contained in this assessment. The use of any information, apparatus, method or process mentioned in this assessment may not infringe upon privately owned rights. The Sustainability Division assumes no liability with respect to use of, or damages resulting from, use of any information, apparatus, method or process disclosed in this assessment. Mention of trade names of commercial products does not constitute endorsement or recommendation for use.

Learning *for* **Life**

Bulletin 1152-6

Revised April 2010

The University of Georgia and Ft. Valley State University, the U.S. Department of Agriculture and counties of the state cooperating. Cooperative Extension, the University of Georgia College of Agricultural and Environmental Sciences, offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, gender or disability.

**An Equal Opportunity Employer/Affirmative Action Organization
Committed to a Diverse Work Force**