TECHNICAL NOTES

UNITED STATES DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE
NOVEMBER 2006 ALEXANDRIA, LOUISIANA

AGRONOMY TECHNICAL NOTE NO. 83

PEST MANAGEMENT

Increasing national awareness of the need to protect ground water resources has led to the recognition that the widespread distribution and use of pesticides is a potentially significant source of ground water contamination. The depth and types of soils above ground water aquifers, characteristics of layers between soils and water tables, pesticide characteristics, and many other factors affect the potential for contamination.

A national pesticide survey of ground water completed by the Environmental Protection Agency in 1990 indicated that a proportion of wells did contain residual pesticides. About 10 percent of the community water supply wells and about 4 percent of the rural domestic wells sampled contained at least one pesticide. However, these levels were usually lower than safe drinking water standards set by EPA. This study demonstrated that a certain amount of some pesticides is moving into ground water aquifers.

Presently, there are no techniques available for cleaning of ground water contamination that involves a large geographical area. Prevention of pesticide contamination by using a good pest management program may be the only way to maintain safe, high quality groundwater.

The main purpose of a pest management program is to manage agricultural pest infestations to reduce adverse effects on plant growth, crop production, and environmental resources. The practice only pertains to cropland. It is designed to protect surface and ground water quality by limiting pesticide application to those only necessary to protect the agricultural commodity.

The following are items the conservationist should consider when assisting a landuser to develop a conservation plan, which involves pesticide use.

1. Encourage the use of integrated pest management (IPM) systems that utilize the most appropriate means of pest management. IPM systems are based on a combination of prevention, avoidance, monitoring, and suppression strategies to maintain pest below economically damaging levels, minimize pest resistance, and minimize the effects of pest control activities on human health and environmental resources. Use field scouting and economic thresholds to determine when and if pesticides should be used. Treatment thresholds for specific pests and crops are available from the LSU Agricultural Center at http://www.lsuagcenter.com.
2. Assist landusers to make a pesticide selection based on its suitability to control the target pest, impact on nontarget organisms, and the environment. Select only those materials recommended for use in the LSU Agricultural Center's Insect Control Guide, Plant Disease Control Guide, and Weed Control Guide for the current year. Any pesticide listed in these

publications is acceptable. However, some pesticides have properties that cause them to have a higher leaching, surface runoff, and/or adsorbed runoff loss potential than others. Soil/pesticide interactions are evaluated using the Windows Pesticide Screening Tool (WIN_PST 3.0) available in all NRCS field offices. Verification of registered pesticides labeled for use in Louisiana may be obtained from the Environmental Programs Division of the Office of Agricultural and Environmental Science, Louisiana Department of Agriculture and Forestry.

3. Plan management and conservation practices that minimize leaching, surface runoff, and adsorbed runoff, that can carry absorbed or dissolved pesticides to surface and ground water.

In addition to these, the conservationist should encourage persons using pesticides to:

1. Read and follow all label directions, as well as local, state, and federal regulations, regarding posting and field re-entry restrictions on treated areas.
2. Report all incidents of accidental release of pesticides that may cause adverse effects on the environment to the Louisiana Department of Agriculture and Forestry and the Louisiana Department of Transportation and Development, if the accidental release is on a public roadway.
3. Store pesticides according to label directions and as specified by local, state, and federal regulations.
4. Avoid exposure by wearing appropriate clothing as specified by product label and local, state, and federal regulations. Know what to do in case of accidental pesticide exposure.
5. Prevent contaminating water supplies by keeping the filler hose or pipe out of the spray tank at all times when adding water to a spray mixture. For added protection, install a backlog prevention device to avoid overflow. Never leave a spray tank unattended. Locate all pesticide preparation areas and storage and supply tanks at least 150 feet away from and down slope from any water well.
6. Dispose of pesticide wastes and pesticide containers according to label directions and local, state, and federal regulation. Triple rinse pesticide containers and add rinsate to spray solution. Clean application equipment after each use and apply rinsate to a labeled site according to label directions. Never re-use pesticide containers for any purpose. Contact the Louisiana Department of Agriculture and Forestry, Office of Agricultural Environmental Sciences, for more information.
7. Calibrate equipment before mixing and loading pesticides and at the beginning of and periodically during each season. Since nozzle wear increases application rate and can alter spray patterns, calibration rates should be checked during the spray season.
8. Avoid spray drift by applying pesticides only when wind speeds do not exceed label directions or local, state, or federal regulations.
9. Develop a safety plan that includes telephone numbers and addresses of the nearest treatment centers for individuals exposed to chemicals and the telephone number of the nearest poison control centers. The Louisiana Drug and Poison Information Center can be contacted 24 hrs/day at 1-800-256-9822. For advice and assistance with pesticide spills, contact the Louisiana Department of Agriculture and Forestry at (225) 925-3763.

Richard C. Aycock
Agronomist