# Update on citrus best management practices

**By Kelly Morgan and Gary England**

Agricultural best management practices (BMPs) are practical measures designed to reduce pollution of ground and surface water from fertilizers, pesticides, animal waste and other pollutants. BMPs are individual or combined practices determined through research, field testing and expert review to be the most effective and practicable means for improving water quality, taking into account economic and technological considerations. Many BMPs are practices currently used by most producers. Any added practices are required only if economically and technically possible by the grower, and only if they will maintain current productivity.

## BMP MANUALS

The Florida Department of Agriculture and Consumer Services (FDACS) has adopted BMP manuals for most commodities in the state including citrus, vegetables, agronomic crops, sod, nurseries and animal production. The manuals are located at http://www.floridaagwaterpolicy.com

Each BMP manual address three groups of production practices (nutrients, irrigation and water protection) specific to the commodity designed to conserve water and protect water quality. Nutrient management includes nutrient needs, sources and application methods based on University of Florida/Institute of Food and Agricultural Sciences (IFAS) recommendations to minimize impacts to water quality. Irrigation management BMPs address the method and scheduling of irrigation to reduce water and nutrient losses to the environment. Water protection practices involve the use of buffers, setbacks, water control structures, fencing and swales to reduce or prevent the transport of sediments and nutrients from production areas to water bodies.

An important part of BMP implementation is documenting BMPs through record keeping, as specified in FDACS rules and BMP manuals. This is sometimes the only way to confirm BMP implementation and should be accurate, clear and well-organized. You may develop your own record-keeping forms or use the ones provided in the manual.

## STATEWIDE CITRUS BMP MANUAL

FDACS recently adopted a statewide citrus manual, replacing four region-based manuals. The new Citrus BMP Manual covers key aspects of water conservation that were common to three of the areas formerly covered by separate citrus BMP manuals (Indian River, Peace and Manasota Basins, and Gulf Coast production areas). The Ridge BMP rule contained BMPs associated with nitrogen application rates and timing and suggested irrigation practices. When the four areas were combined into one Citrus BMP Manual, the Ridge growers covered under the Ridge nitrate rule had to be re-enrolled under the new Statewide Citrus BMP Manual by December 31, 2014. Once these Ridge growers are re-enrolled, nearly 100 percent of the commercial citrus production area will be participating in BMP programs.

Nutrient and irrigation management recommendations can be found in IFAS publication SL 253, "Nutrition of Florida Citrus Trees," and are cited in the Citrus BMP manual. For additional information, contact your local UF/IFAS Extension agent (see http://citrusagtents.ifas.ufl.edu for the agent that covers your grove location).

## BMP ENROLLMENT

Enrolling in, and implementation of, FDACS-adopted BMPs provides a presumption of compliance with state water quality standards for the pollutants addressed by the BMPs. The presumption of compliance is based on the expectation that producers understand and address the water conservation and quality issues in their operations, within economic and technical constraints. FDACS staff members are available to assist producers with on-site assessment and BMP selection (see http://www.freshfromflorida.com/Divisions-Offices/Agricultural-Water-Policy/BMP-Implementation). During the BMP assessment and enrollment process, they will help growers evaluate current production practices on the growers' property, identify the BMPs growers currently implement, and determine whether there are additional applicable BMPs.

## BASIN MANAGEMENT ACTION PLANS

The reason growers must concern themselves with BMPs is that Florida Department of Environmental Protection (FDEP) is required to develop Basin Management Action Plans (BMAPs). BMAPs are developed for water basins surrounding rivers, springs or other surface water bodies that are deemed impacted by not only agricultural practices but industrial and urban sources. Under state and federal law, Florida must develop total maximum daily loads (TMDLs) for all waters that are not meeting their designated uses, such as drinking water, fishing, swimming or shellfish harvesting. A TMDL is the maximum amount of a given pollutant (nitrogen, phosphorus, mercury, etc.) that a water body can assimilate and still maintain its designated use. FDEP is required to establish TMDLs maximum water quality targets for the amounts of pollutants that can enter a water body. These TMDLs are divided up among all activities that can potentially contribute to decreased water quality of the water body for which the TMDL was established.

## POTENTIAL WATER-QUALITY MONITORING

Where FDEP adopts a BMAP that includes agriculture, producers must either implement FDACS-adopted BMPs or conduct expensive monitoring (prescribed by FDEP or the water management district) at the land owner's expense to show they are not violating water quality standards. The FDACS consults with the agriculture industry and others to develop BMPs to address water conservation and quality, including the reduction of nutrient loads to help meet BMAP goals. The BMAPs are reviewed by FDEP every five years to determine if water quality is improving as established for the BMAP. Some of the original BMAPs established along the St. Johns River have been reviewed. FDEP is in the process of requiring all agricultural producers in the BMAPs not meeting pollution reduction goals to enroll in BMP programs or establish mandatory monitoring programs.

## CONCLUSIONS

It is clear that participating in FDACS BMPs is the best option, even if you are not yet in a BMAP area. Water quality monitoring is very costly, and could show that an operation is not in compliance with standards, possibly leading to fines or other regulatory consequences. On the other hand, implementation of FDACS-adopted BMPs provides a presumption of compliance with state water quality standards for pollutants the BMPs address (such as nitrogen and phosphorus). There are other potential benefits from implementing BMPs, including water savings and reduced fertilizer and energy costs.

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