The St. Johns River Water Management District (SJRWMD) has developed a cost share program with input from state agencies; grower organizations; and UF/IFAS state and county faculty to promote Best Management Practices (BMPs) in potato production. The program is managed by the SJRWMD. The goal of the cost-share program is to provide potato growers in the Tri-County Agricultural Area (TCAA, St. Johns, Putnam, and Flagler Counties) with an economic incentive to implement voluntary BMPs without incurring additional cost and/or risk that might result from implementing the new technology. Complete details of the program are listed in the Tri-County Agricultural Area Water Quality Protection Cost Share Program Handbook available at the St. Johns River Water Management District offices (Livingston-Way, 2000). The types of BMPs that are eligible for funding include Nutrient Management, Irrigation Water and Sediment Management, and Other Soil and Water Management Practices. The objective of this publication is to summarize the BMPs that are recommended for potato production in northeast Florida.

**Nutrient Management**

BMPs listed in this category were developed to improve the application of nutrients to better match nutrient uptake and use by the potato crop. The goal is to minimize the potential for non-point pollution from potato production by reducing fertilizer rates and improving fertilizer management. BMP nitrogen rates are based on IFAS research in potato over multiple years (Hochmuth and Cordasco, 2000; Hochmuth et al., 2002; Kidder et al., 1992).

1. **Reduced Fertilizer Rates.** The goal of this BMP is to reduce the amount of applied fertilizer to the IFAS recommended rate (200 lb N/A and 0 to 35 lb P/acre). Three nitrogen rate ranges have been established for growers to target. The ranges are (1) 226 to 250 lb N/A; (2) 201 to 225 lb N/A and; (3) 175 to 200 lb N/A. To receive funding for BMP implementation, the grower must document a reduced rate compared to historical records. Growers are entitled to a larger cost share as their nitrogen rate decreases toward the target rate. Nitrogen must be applied in a minimum of two applications during the season. The BMP allows for supplemental...
nitrogen application following a leaching rain event.

2. **Reduced Fertilizer Rate with Nitrogen Sap Meter.** The grower is encouraged to use a sap meter to measure nitrate levels in leaf petiole sap over the season. The grower will be reimbursed for the cost of the sap meter and supplies when the IFAS recommended nitrogen rate has been applied.

3. **Soil Testing.** The expense of the Standard Soil Fertility Test, which includes pH, lime requirement, phosphorus, potassium, calcium, and magnesium, will be reimbursed to growers annually. The IFAS Extension Soils Testing Laboratory must test the sample.

4. **Shut-Off Valve.** The grower is encouraged to purchase and install a shut-off valve on the fertilizer applicator so that liquid fertilizer application can be shut off on the turn rows. The grower will be reimbursed for the cost of the equipment but will be responsible for installation.

**Irrigation Water and Sediment Management**

BMPs listed in this category are designed to help growers maintain the optimum water table conditions on a seepage irrigation system. Proper maintenance of the water table reduces water use and decreases the incidence of off farm drainage.

1. **Observation Wells.** Growers are encouraged to install two observation wells per 40-acre field to monitor and manage water table depth. Water table depth should be maintained at 15 to 24 inches below the surface of the potato row. The cost of observation wells is reimbursable.

2. **Irrigation Water Management and Sediment Control.** This BMP involves the proper management of irrigation applications to meet the water requirements of the crop without wasting water, soil, or nutrient resources. Irrigation water should be managed so that the water table depth is maintained 15 to 24 inches from the top of the potato row. Sediment loss should be managed by maintaining boards in the water control structure over the fallow season. The boards should be maintained at a twelve-inch height above the bottom of the riser culvert. Sediment must be removed from the drainage ditch prior to removing the weir boards. Growers will be reimbursed a flat rate for the cost incurred in meeting this BMP.

3. **Control Structure.** The grower will be reimbursed a flat rate to install the proper number of water control structures to maintain water table and runoff control on each field. The Natural Resource Conservation Service (NRCS) will determine the number of water control structures needed. Weir boards are required to be maintained during the fallow season to trap sediment in the tailwater ditch.

**Other Soil and Water Management Practices**

BMPs listed in this category are designed to reduce the need for nitrogen inputs and to recycle the inputs applied in the crop production system.

**Conservation Crop Rotation.** Growers are encouraged to move from traditional mono-cropping systems to systems that include other low nitrogen requiring crops. Traditional crops are defined as potatoes, cabbage, and sorghum-sudan grass cover crop. Alternative crops include crops requiring less than 200 lb N/A/year-season based on IFAS recommendations documented in the “Vegetable Production Guide for Florida” (Hochmuth et al., 2001). A five-year rotation will be designed for each participating field in which two of the five years will be planted in an “alternative crop.” Growers will be reimbursed for each of the alternative years at a flat rate per acre.

**Availability, Distribution, and Maximum Amounts of Cost Share Funds**

1. The cost-share funds are reported to be available to any vegetable grower in the TCAA who currently grows potatoes. Cost share funds are limited and are on a first come – first serve basis.
2. The cost-share program requires a five-year contract period for BMP implementation. No limit has been placed on the number of fields that can be enrolled in the program.

3. The applicant is responsible for maintaining a structural practice for the duration of the contract and will be responsible for repayment of the cost-share funds if the contract is not met.

4. For further information regarding the cost-share program, contact county extension personnel in St. Johns, Flagler, and Putnam counties or the St. Johns River Water Management District.

References


