

HILL FARM RESEARCH STATION

APRIL 24, 2008

FIELD DAY SUMMARY REPORT

COMMODITY: WATER QUALITY

TITLE: Update on water quality research at the Hill Farm

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TAKE HOME MESSAGE: Water quality research is underway at the Hill Farm to evaluate BMPs for forestry, beef, and dairy. These studies will determine the effectiveness of recommended agricultural procedures in these commodities for buffer zones, restricted pond access, and stream management zones on protecting water quality

PROBLEM/TOPIC: BMP guidelines for beef, dairy, forestry, and poultry operations all recommend buffer zones, streamside management zones (SMZ's), or watershed access management of various sizes and types to slow runoff, decrease erosion and protect water quality. While it is clear that such zones are effective for controlling non-point sources of pollution, the optimum size of these zones and intensity of access management is unclear. Studies are evaluating Best Management Practices (BMP's) involving buffer strips, access to ponds by cattle, and streamside management zones. The Hill Farm Research Station is uniquely suited to evaluate BMP's of beef, dairy, and forestry enterprises. Research projects in all commodities are active at this station and a variety of land types are available. This project is a joint effort of project leaders in beef, dairy and forestry, and will evaluate BMP's from each commodity area.

ACTION: Effects of buffer strips on surface water quality after poultry litter application on test plots are being evaluated and data collection will continue through 2008. Results thus far suggest no differences for phosphorous, nitrate, nitrite, total nitrogen and total coliforms. Mean fecal coliforms were lowest in control plots receiving no litter application. Evaluation of farm ponds with full access, limited access and no access by cattle indicated that fecal coliforms were lowest in ponds with no or limited access to ponds by cattle. Limiting access of cattle to ponds is more management intensive than traditional free access methods. Additional fencing and brush and weed control issues must be weighed against potential gains in water quality. Data collection from the ponds will continue through 2008. The forestry component of the study has yet to begin and is currently being reevaluated.

IMPACT: Agriculture is under increased scrutiny for the impact it may have on water quality. Producers are facing increased regulation and increased public pressure to insure that agricultural practices do not negatively impact water quality and human health. Studies underway at the Hill Farm will verify current recommended practices in forestry, dairy, and beef that are designed to protect water quality.