

Water Management Best Management Practices for Phosphorus Control on Organic Soils: Retention of Vegetable Field Drainage Water in Sugarcane or Fallow Lands ¹

Del Bottcher and Forrest Izuno²

This fact sheet is part of a BMP series which was written specifically to address the concern for phosphorus control in the Everglades Agricultural Area. The information contained in the series may be applied to any agricultural area composed primarily of organic soils or Histosols. However *please be aware that this information may not be applicable to any other soil types.*

BACKGROUND

This Best Management Practice could reduce phosphorus losses from 20-90% on any given farm. The 90% reduction would reflect a situation where a significant amount of sugarcane land was available to receive the vegetable drainage water. The use of vegetable drainage in sugarcane fields can also offset some of the fertilizer requirements in the receiving fields. However, the phosphorus rates being introduced to the sugarcane field should not exceed recommended rates. The phosphorus loss from the sugarcane lands would likely increase slightly due to receiving this exact water, but the net phosphorus loss of the vegetable and sugarcane land together would be significantly reduced.

This BMP will require the availability of *hydraulically isolated* sugarcane land adjacent to the vegetable field/block in order to minimize cost and the difficulty of moving water to sugarcane land.

Drainage water from the vegetable area would be pumped into neighboring sugarcane blocks as required to maintain optimal vegetable production. Excess water within the sugarcane blocks would then be managed in the same manner as previously outlined in the sugarcane farm level retention and block storage BMPs described in this guide (see Retention of Drainage On-Farm).

The primary design concern for delivering vegetable drainage into sugarcane fields is the rotational nature of vegetable production from year to year and from farm to farm. Vegetables are often grown on sugarcane lands during the rotational fallow period which occurs once every 3-5 years. This means that the hydraulic isolation for the vegetable field would be used only once every four years, creating a greater per acre expense over continuous vegetable production. However, since the hydraulic blocking of a sugarcane farm may already be advantageous for water retention (see Retention of Drainage On-Farm), the adaptation of one of the sugarcane blocks for temporary vegetable production could be easily handled with little additional expense. The potential phosphorus reduction by both block retention and vegetable drainage into sugarcane lands is so high for this BMP that a permanently blocked farm system should be strongly considered.

1. This document is AGR58, one of a series of the Agricultural and Biological Engineering Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date December 1992. Reviewed July 2002. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

2.