

depths. The obvious shortcoming of dipping samples is that getting a sample from the proper place within a canal can be an adventure and may require an extremely long-armed individual with great intestinal fortitude.

Theoretically, to delineate the P concentration distribution over a pumping event, a series of grab samples may be collected every hour or two during the event. This can be accomplished by a very dedicated individual. However, the procedure would be time consuming and requires that a person be located at the site throughout the drainage event.

In many water quality monitoring programs, grab samples are collected on a preset time basis.

In other words, they are pulled daily, weekly, monthly, etc., depending on the resolution desired. However, such an approach is not appropriate for our purposes. The water of interest in the EAA is that which is pumped off the farm (drainage) and that which enters a farm (irrigation). Periods when neither irrigation nor drainage are occurring (i. e. static water) are not of interest and samples should not be gathered at those times. Including samples from static water conditions in a data set can inappropriately bias average concentrations. An example of monthly grab sample concentrations compared with event average concentrations is shown in Figure 1.

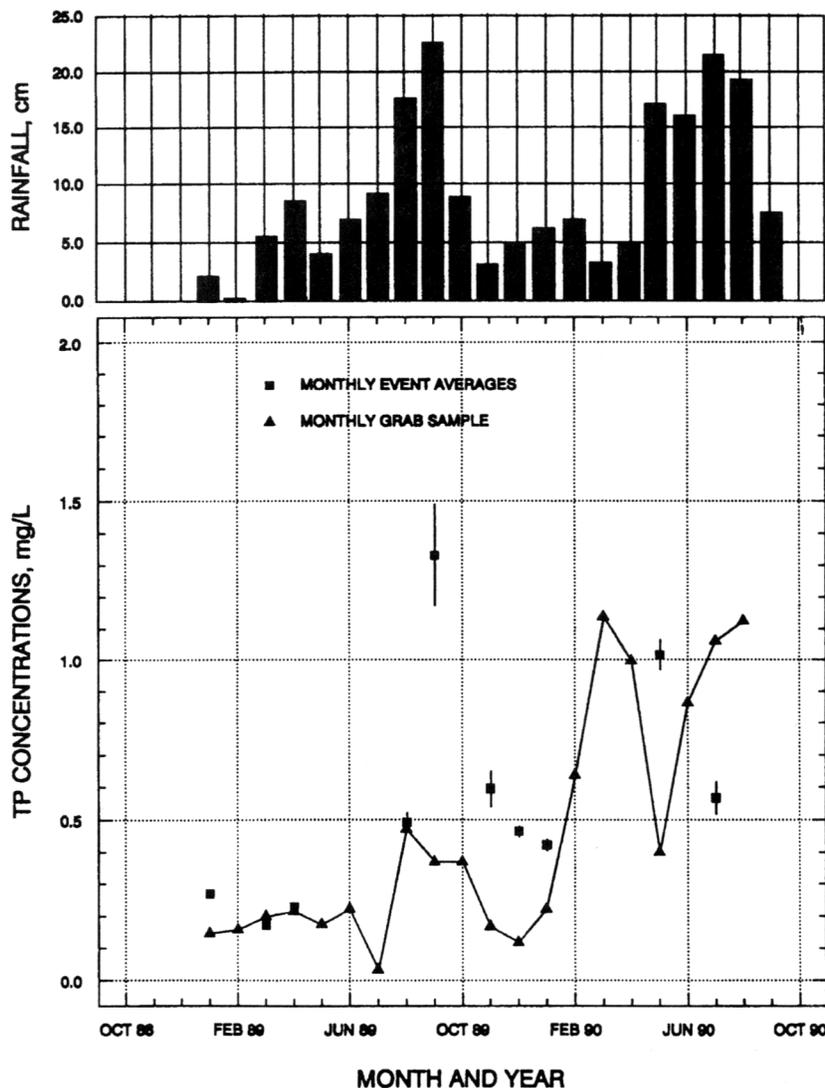


Figure 1. Monthly average total phosphorus concentrations from autosampled drainage events and monthly grab samples for vegetable field.