SIMULTANEOUS ADOPTION OF AGRICULTURAL BEST MANAGEMENT PRACTICES IN FLORIDA: TAILWATER RECOVERY SYSTEM AND OTHER BEST MANAGEMENT PRACTICES FOR VEGETABLES AND AGRONOMIC CROPS

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Agricultural best management practices (BMPs) can help to minimize nonpoint source water pollution by reducing nutrient over-enrichment and improving irrigation management. To maximize their effectiveness, multiple BMPs may be adopted simultaneously, as a combination of practices in a BMP "treatment train." The Florida Department of Agriculture and Consumer Services maintains a dataset of growers' intent to implement conservation plans. Data for vegetable and agronomic crop growers are used to analyze patterns of multiple-BMP selection. Using cluster analysis, we show that the patterns of simultaneous BMP adoption vary among growers. The differences are partially explained by the variations in production systems. Further, since simultaneous adoption of tailwater recovery systems (TWR) with other BMPs is thought to have additive environmental benefits for reducing irrigation water usage, we focus on the BMP "treatment trains" that include TWR. Approximately 12% of growers simultaneously adopted TWR, maintained water table levels, installed water table observation wells, used irrigation scheduling tools, and installed rain gauges. Of growers who adopted TWR, several adopted irrigation scheduling tools (67%) and installed rain gauges (77%), while fewer maintained water tables (16%) and water table observation wells (14%). Positive and significant unobserved variation in the bivariate probit regression analysis indicates that TWR is complementary to maintaining water table levels and installing water table observation wells. Regression results also indicate that increased precipitation in the prior year and being in the Northwest Florida Water Management District positively affects TWR adoption while observing freezing temperatures and having swamp and marsh lands negatively affect adoption. This analysis points to the need to identify BMP "treatment trains", analyze their environmental and economic implications, and examine the drivers of adoption. Overall, improved understanding of BMP "treatment trains" can help increase BMP use through the adoption of complementary practices.

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