My work develops a methodology for identifying optimal chemical treatment dates for the case when a limited number of pesticide applications are permitted per season due to environmental regulation. This is done to help inform policy makers about the costs and benefits associated with policies made to help manage invasive species. To accomplish this I assess the economic costs and benefits of restrictions on Esteem use, a chemical used to manage the recent invasion of the greenhouse whitefly in strawberry fields along the California coast. I compare the results of the model against actual practice, and evaluate how the timing of control, as affected by market demand and government policy, contributes to the overall management of the regional pest population. Preliminary results about the importance of resistance management are also presented.