

**QUANTIFYING PEST EXTERNALITIES IN TEXAS HIGH PLAINS COTTON**

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**Abstract**

Most input use recommendations in the Texas High Plains region are derived from models without considering the external effects of water and nitrogen additions on arthropod populations and their associated crop damage. Failure to account for such negative externalities, if they are significant, might lead to overestimates of the marginal product value of water and nitrogen inputs, encouraging their use at unnecessarily intensive levels. Strong needs exist for an assessment of the opportunity costs of myopic input use decisions that ignore pest externalities, or equivalently, of the benefits from adopting holistic, as opposed to myopic, input use management. In this study, we aim to examine the effect of these pest externalities in cotton production in the Texas High Plains.