

**Abstract:**

This study uses a multivariate probit model and the Poisson regression to examine the role of varietal attributes in farmers' adoption of improved pigeon pea (*Cajanus cajan*) varieties in Taita District, Kenya. It is based on data collected from 200 households stratified by adoption of improved pigeon pea varieties between April and May 2009. The study finds correlation in the decisions made by farmers to adopt different varieties, implying that using simple probit analysis could yield biased and inefficient results. The results further indicate that the major pigeon pea varietal traits driving rapid adoption are drought tolerance, pest tolerance, yield, ease of cooking, taste and price. Early maturity, a major focus of recent research, has no effect on farmers' adoption decisions. These findings imply that developers of improved crop varieties should pay attention to consumption and market characteristics in addition to production traits to increase technology uptake and satisfy farmers' multiple needs.