Smallholder Farmers' Perception of *Rhizobia* inoculant: A case of soybean (*Glycine Max*) producers in Western Kenya

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Abstract: Declining soil fertility poses a severe threat to sustainability of agricultural production in Africa. To improve soil fertility, research on integrated soil fertility management technologies has yielded promising soil replenishment technologies. One such technology is the use of legume *Rhizobia* inoculants that enhance biological nitrogen fixation. In Kenya, a commercial *Rhizobia* inoculant has been developed and marketed as BIOFIX®. However, despite the demonstrated benefits of the use of *Rhizobia* inoculants, the use by smallholder farmers still remains low, necessitating the need to understand farmers' decision-making environment. The aim of this study was to examine how smallholder farmers perceive BIOFIX® *Rhizobia* inoculant. The study used data collected from 210 soybean farmers in Western Kenya and Ordinal Logistic regression to assess factors influencing perception. The results show that farmers who have used BIOFIX® view it more positively than those who do not use. Perception was significantly ($p < 0.01$) and positively influenced by frequency of contacts with organizations promoting BNF and membership in soybean producer group. The use of nitrogenous fertilizers on legumes influenced perception positively ($p < 0.05$) while farmer's age influenced perception negatively ($p < 0.10$). Perception was also influenced by region from where farmers came from ($p < 0.05$). The findings of this study imply that there is need to support extension efforts that give farmers opportunity to try out technologies such as on-farm demonstrations. Apart from promotion of use by local organizations, other channels of passing information and knowledge of BNF technologies need to be explored such as the use of radio, television and mobile phones.

Key words: Farmer perception, legume inoculants, Ordered Logistic regression, *Rhizobia*