République de Côte d'Ivoire

CENTRE D'EXCELLENCE AFRICAIN

sur le Changement Climatique, la Biodiversité et l'Agriculture Durable

3ème CONFÉRENCE INTERNATIONALE SUR LES PLANTES PESTICIDES

(Conférence Hybride)

Livre des résumés

THEME

Promouvoir les plantes pesticides pour une agriculture durable et un environnement sain

25, 26, 27, 28 et 29 juillet 2022

Yamoussoukro (Fondation Félix Houphouët-Boigny pour la recherche de la paix)

6785 | BENEFIT COST ANALYSIS OF INNOVATION PACKAGES TO REDUCE THE USE OF SYNTHETIC PESTICIDES: THE CASES OF COMBINED INSECT-PROOF NETS WITH NEEM AND CARAPA OIL FOR TOMATO PROTECTION

PABO QUEVIN OULA, MARTIN THIBAUD, LASSINA FONDIO, BEAUDELAIRE DJEZOU AND DAOUDA KONE

PABO QUEVIN OULA

quevinoula@gmail.com/Centre international de recherche agronomique et de developpement/Cote d'Ivoire

The agricultural sector in Côte d'Ivoire faces the continuous rise of urban and periurban agriculture and the excessive use of synthetic pesticides. This study estimates the effects of combined insect-proof nets with Neem and *Carapa* oil on the yield and the profitability of tomato cropping systems. An experimental trial was composed of three types of pest management strategies : an untreated control, a treatment with Neem and *Carapa* oil, and two treatments which combined plants extracts and insects-proof nets. The double difference and cost-benefit analysis methods were used for the economic assessment. Our results revealed a significant difference in average yields between cropping systems. The yield with combined insect-proof nets with Neem and *Carapa* oil is almost 3 times greater than the control (6.6 t.ha-1 vs 16.1 t.ha-1) in the dry season. There is no significant difference during the rainy season. The Benefit:Cost ratio is 1.90:1 for Neem and *Carapa* oil only and 2.98:1 for Neem and *Carapa* oil with insect-proof nets. The cost of the insect-proof cause the difference in the Benefit:Cost ratio. The sensitivity analysis reveals that the tomato cropping systems, remain profitable even when farm-gate prices and production decrease by 20% and 30% respectively, and production costs increase by 30%. Iron frames and insect-proof nets are not yet considered as agricultural investments. A tax policy considering iron frames and insect-proof nets as agriculture investments, would lower the tax rate from 20% to 5%, and therefore improve the Benefit:Cost ratio. A supply chain policy aiming at producing insect-proof net locally, would generate economies of scale and therefore lower the unit price of insect-proof nets. Other policies could consist in in technology support and training. There is a need to perform a sustainability assessment of the Neem and *Carapa* oil supply chains.

profitability, insect-proof, pesticides, tomato, treatment, economic

poster