



Tropentag, September 11-13, 2024, hybrid conference

“Exploring opportunities ...
for managing natural resources and a better life for all”

Farmers’ knowledge of fall armyworm, and factors influencing the choice of control method in Benin

TAMEGNON HOSPICE TOSSOU¹, JAN HENNING SOMMER¹, MANUELE TAMÒ², CHRISTIAN BORGEMEISTER¹

¹University of Bonn, Center for Development Research (ZEF), Ecology and Natural Resource Management, Germany

²International Institute of Tropical Agriculture (IITA), Biorisk Management Facility (BIMAF), Benin

Abstract

The fall armyworm (*Spodoptera frugiperda*) causes production losses of around 49 % in maize production in Benin, where it has been recorded for the first time in 2016. This represents a threat to farmers and to the food security of the population, for whom maize is a key food. We evaluated the perception and management practice of maize farmers in Benin’s southern agricultural zone farmers vis-a-vis *S. frugiperda* by conducting a survey using a semi structured questionnaire of 242 farmers in four maize growing departments: Atlantique, Zou, Couffo and Plateau from Sep to Nov of 2023. We found that 93 % of farmers have a broad knowledge of the *S. frugiperda* pest and 95 % believe that they are victims of its infestations and that *S. frugiperda* is very dangerous. Farmers reported that *S. frugiperda* causes more damage to the leaves of maize (88.8 %) and the symptoms could be morphologically recognised by farmers, varying by department: Plateau (91.2 %), Zou (96.6 %) Atlantique (96.8 %) and Couffo (100 %). In 2020, farmers estimated a yield loss of 29 %. The situation worsened in 2021, with more maize lost (30 % of production). By 2022, farmers seem to have taken control of the situation, with a 6 % reduction in damage. 73 % of farmers spray synthetic chemicals, 2,5 % cultural practices, 12,9 % any method while only 1.2 % use botanical extracts. The variables that determined the use of a control mean by farmers were: year of experience in maize production, availability of financial resources and, to a lesser extent, the effectiveness of the control method. Logistic regression showed that the propensity for each farmer to use a control method against *S. frugiperda* increased when they had much more experience in maize production and when financial resources were available, and only if the farmer felt that the method was effective. Research and agricultural extension services should consider those factors in the development of any sustainable management of *S. frugiperda* programme in Benin.

Keywords: Perception, *Spodoptera frugiperda*, sub-Saharan Africa, *Zea mays*