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POSTER

D3648: Cultivated plant diversity controls arthropod communities and *Helicoverpa armigera* regulation in tomato cropping systems

Thursday, September 29, 2016 09:00 AM - 05:00 PM

Convention Center - West Hall C

The intercropping can increase the plant biodiversity, conserve the local crops and modify the arthropod communities for pest management. With the goal of optimizing pest management, we studied the effect of cultivated plant diversity, their spatial organization on the arthropod communities and *Helicoverpa armigera* regulation in tomato cropping systems. During the study, 30 farmer's fields were selected in South of Benin (West Africa) and we assessed the diversity of cultivated plants inside and around of the tomato fields and determined the arthropod communities. This study showed that the arthropod families Hymenoptera, Orthoptera, Araneae and Coleoptera were most abundant in tomato cropping systems. Cultivated plant diversity increased the abundance of the omnivore predators and generalist predators which are negatively correlated with *H. armigera* abundance meaning it biological control. The different crop association types increased the arthropod abundance for the stability of theirs food webs at local field scale while at the neighbour field scale, the crop associations increased or decreased the arthropod abundance according to the types. The plants palm, pineapple, maize, cassava, triumphetta, talinum and groundnut could be the best plants associated to the tomato for ecological management of *H. armigera*. This study allowed us to understand how to organize the landscape of tomato cropping systems for the best arthropod food web structures, the ecological management of *H. armigera*.

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