

First report of the fall army worm, *Spodoptera frugiperda* (Lepidoptera, Noctuidae) in Cameroon

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During a practical (field) session of farmers training on integrated management of maize pests within the framework of the project entitled "Agricultural Investment and Markets Development Project", unexpected damages on maize plants were observed in Foubot, Western Cameroon on 18 December 2015. Leaves were almost completely destroyed with many holes and frass from caterpillar (Fig. 1). Also surprising, one could easily find inside the whorl, the caterpillar responsible of these damages (Fig. 2). This is not always the case for the well known Lepidopteran stem borer whose caterpillar can't be seen without destroying the plant. In addition, from caterpillars collected and incubated in the Entomology Laboratory of the University of Douala, emerged moths were completely different from all known adult stem borers. While reviewing the literature in March 2016, we came across a recently published article on the first report of the fall army worm in Western and Central Africa (Goergen et al. 2016). We contacted the author who positively identified our sample as the fall army worm (FAW) *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae), a species native to tropical America. This paper is therefore the first report of the FAW in Cameroon.



Figure 1: Damages of the fall armyworm on maize plant, observed in Foubot, west Cameroon on 18 December 2015.



Figure 2: Caterpillar of the fall armyworm on maize plant, observed in Foubot, west Cameroon on 18 December 2015.

During next training sessions, discussion with farmers also confirmed the presence of the pest during the first cropping season (March óJuly) of the same year 2015. These data indicated that this pest has probably been present in Africa before January 2016, date of the first report in Western and Central Africa (Goergen et al. 2016). Indeed, these authors suspected, base on molecular analysis more than one introduction of this pest in the continent. The pest was then collected and reared in the Laboratory or simply observed in the following localities in Cameroon : Foubot (5,52946 N; 10,64953 E) on 18.XII.2015, Nyomo (3,74634 N; 11,48555 E) on 12.IV.2016, Mobonoó Maroua (10,4063167 N, 14,23485 E) on 22.IX.2016; Mbalmayo (3,471167 N; 11,48583 E) on 16.X.2016, Manengole (4,72284 N; 9,72294 E) 23.X.2016; Foubot (5,52946 N; 10,64953 E) on 09.XII.2016, Debunscha (4,10533333 N; 8,987386 E) on 07.IV.2017; Douala ó Ndog Bong (4,04824 N; 9,75039 E) 09.IV.2017; Yaoundé Vogt-Ada (4,4394503 N; 11,88707 E) on 31.IV.2017; Dschang (5,45719 N, 10,06501 E) on 29.IV.2017; Kumba (4,65025 N; 09,42135 E) on 05.V.2017. In all the cases, damages were severe with plant incidences varying from 25% to 75%. These reported infested sites belong to West, Centre, Far North, Littoral and South West regions, but recent information received from farmers and extension agents strongly indicate that this pest is already present in almostall the ten regions of Cameroon. Surveys are on going to determine the precise distribution of the pest.

According to Georgen et al. (2016), the FAW is originated from the tropical regions of the Americas going from the United States to Argentina and the Caribbean region. It is a prime noctuid pest of maize and has remained confined there despite occasional interceptions by European quarantine services in recent years. It has been recently introduced into the African continent and has already moved to at least 21 countries where the pest has been reported for the past 16 months (Abraham et al. 2017; Stokstad 2017). The genus *Spodoptera* comprises 31 species with seven species previously recorded from the Afrotropical region while six species are known to occur in West and Central Africa (Pogue 2002). *Sopodoptera exempta* or African armyworm is the most common and well known amongst them in Africa.

The FAW is a polyphagous pest that feeds on at least 100 plant species belonging to 27 families (Pogue 2002). However Poaceae plants like maize, sorghum, rice, wheat, sugar cane etc. are preferred. All developmental stages of maize plant are attacked but severe damages occurred on young plants. In Cameroon, damages have been observed on maize and sorghum. The most common management strategy for the fall armyworm in the Americas, has been the use of insecticides and genetically modified crop (*Bt* maize). However, the worm has evolved resistance both to several pesticides and to some kinds of transgenic maize (Adamczyk et al. 1999; Abraham et al. 2017). Currently, integrated management strategies are thought to be the best options. These include monitoring (weekly plant inspection) for treatment decision making, good practices (early planting, use early maturing varieties, intercrop maize with legume, weeding, remove and destroy all crop residues, rotate maize with a non-host , ploughing/cultivating to expose larvae and pupae, handpicking egg masses and larvae, applying sand (mixed with lime or ash), sawdust or soil in the whorl etc.) In addition, according to Abraham et al (2017), government of countries with FAW presence should immediately promote awareness of FAW, its identification, damage and control, provide emergency/temporary registration for the recommended pesticides. Adequate management strategy could not be developed without assessing its current distribution and elucidating its bio-ecology in this new environment. Emphasis should also be put on its interactions with others known lepidopteran pest on cereal

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