

# The insect *Pseudotheraptus devastans* Distant (Hemiptera: Coreidae), a new threat to cocoa production in the Haut-Sassandra region of Côte d'Ivoire

Norbert N'Dri KOUAME<sup>1\*</sup>, Pierre Walet N'GUESSAN<sup>1</sup>, Klotioma COULIBALY<sup>1</sup>,  
Acka Jacques Alain KOTAIX<sup>1</sup>, François Kouamé N'GUESSAN<sup>1</sup>, Yao TANO<sup>2</sup>

1. Centre National de Recherche Agronomique, Côte d'Ivoire;  
2. Université Nangui Abrogoua, 02 BP 801 Abidjan 02, Côte d'Ivoire

## INTRODUCTION

The cocoa tree (*Theobroma cacao* Linné) is a very important perennial plant in Côte d'Ivoire and around the world. Despite this importance, the sustainability of this crop is threatened by many pests. In Côte d'Ivoire, mirids, stem borers, stink bugs, defoliating caterpillars, etc. are known insects causing damage in the Ivorian cocoa orchard (Kouamé *et al.*, 2015). In addition to these insects, emerging pests such as the caterpillar *Achaea catocaloides* and the coreidae *Pseudotheraptus devastans* cause damage in the orchard (Kouamé *et al.*, 2021). *P. devastans* is an insect that has mirid-like damage. These insects attack pods, twigs etc. Lesions caused by *P. devastans* were higher than those of mirids (Avicor *et al.*, 2021). The damage are found throughout the Ivorian orchard. It is therefore necessary to determine the seasonal variation of this insect in order to implement better control strategy against this emerging pest in the cocoa orchard.

## OBJECTIVE

Contribute to the integrated pest management by the determination of the seasonal variation of new emerging pest.

## MATERIAL AND METHODS

The trial was carried out in the county of Daloa located in the center-west of Côte d'Ivoire. Six cocoa plantations of at least 4 ha each presenting *P. devastans* attacks (Figure 1) were selected at the rate of 2 per axis in the localities of Boguedia, Zoukougbeu and Gonaté. In each plot, 12 cocoa trees treated with high dose each month in order to knock down all the insects hosted by the tree. The insecticides (Figure 2) were applied in the morning, between 6 and 8 AM, using a Cifarelli mistblower. Before the treatments, the identified cocoa trees were covered. The 16 m<sup>2</sup> tarpaulins were spread out directly above the cocoa trees identified by plot (Figure 3). The collection of insects killed by the insecticide of active ingredients acetamiprid + bifenthrin was made 5 hours after treatment. The count of insects collected was made on the tarpaulin.



Figure 1: *Pseudotheraptus devastans* damage on pods



Figure 2: Insecticide m.a Acetamiprid + Bifenthrin



Figure 3: *P. devastans* collection

## RESULTS

The different larval and adult stages of *P. devastans* were collected during this study (Figure 4). The population of *P. devastans* does not differ from one locality to another. Decreasingly, Zoukougbeu recorded  $5,35 \pm 1,65$  coreidae. It was followed by Gonaté with  $4,65 \pm 0,85$  and Boguedia with  $4,01 \pm 1,05$  *P. devastans* (Table I). The seasonal variation of *P. devastans* showed that these insects are important during the months of February, March, August, September, October, November, December (Figure 5).



Figure 4: *P. devastans* larvae and adults

Table I: Average number of *P. devastans* per cocoa tree

Locality	Mean number of <i>P. devastans</i>	Means assigned the same letters are not statistically different at the 5% level
Zoukougbeu	$5,35 \pm 1,65$ a	
Gonaté	$4,65 \pm 0,85$ a	
Boguedia	$4,01 \pm 1,05$ a	

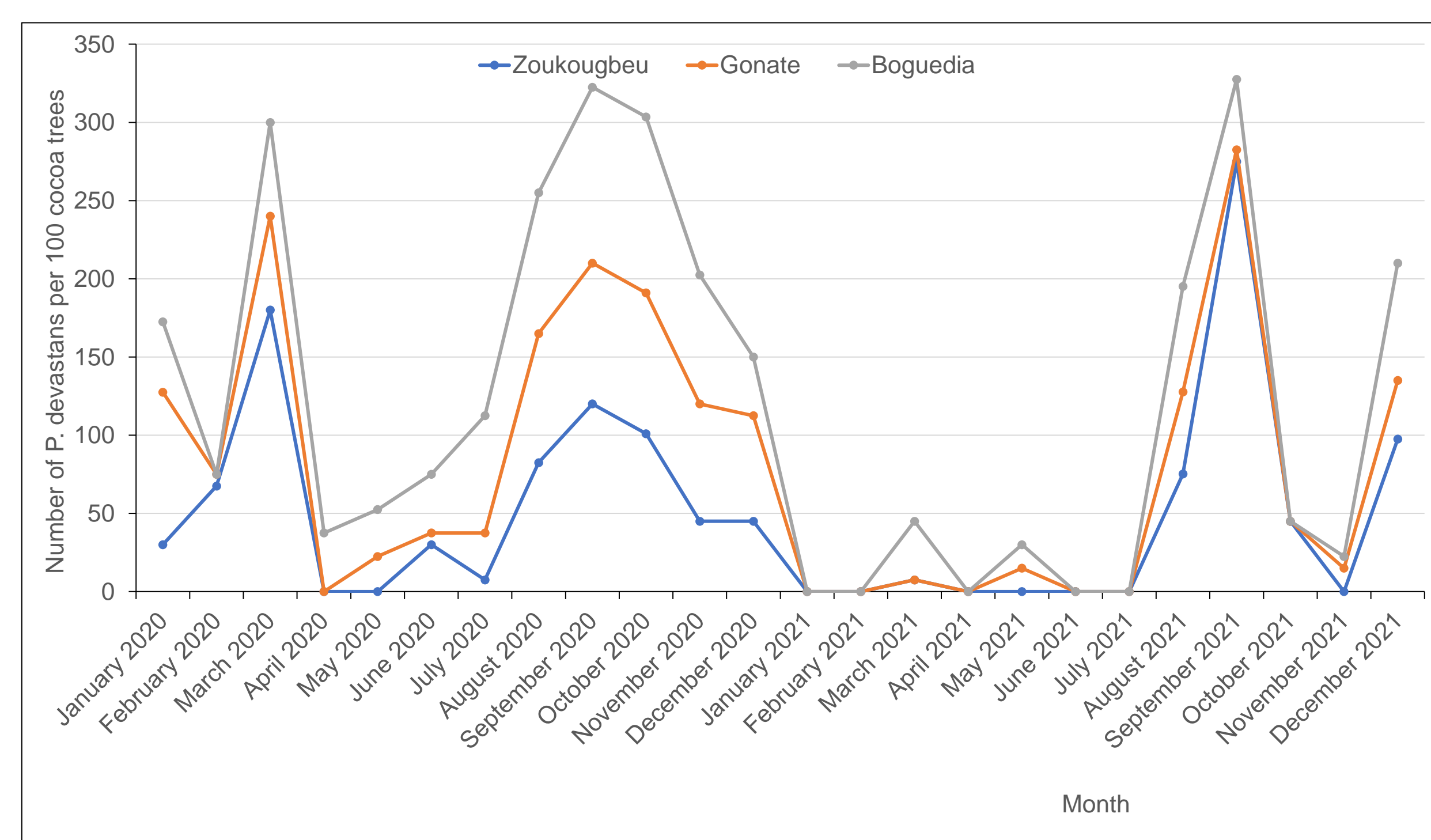


Figure 5: Seasonal variation of *P. devastans* in Haut-sassandra

## CONCLUSION

The results of this study showed that the coreidae are insects causing very significant damage in the region of Haut-sassandra. The population of this insect is important during the months of August, September, October, November while there are many pods on the cocoa trees. Today, this study allows us to understand the proliferation of this insect in the Haut-sassandra region. Further studies need to be done in other cocoa growing regions to really understand the factors favoring importance of these pests.

## BIBLIOGRAPHIC REFERENCES

- Avicor S. W., Adu-Acheampong R., and Awudzi G. K., 2021. Outbreak and insecticide susceptibility of pod feeding-larvae on cocoa in Ghana. *Tropical Agricultural Science*. DOI: <https://doi.org/10.47836/pjtas.45.1.04>.
- Kouamé N. N., N'guessan K.F., N'guessan A.H., N'guessan W.P. et Tano Y., 2015. Variations saisonnières des populations de mirides du cacaoyer dans la région du Haut Sassandra en Côte d'Ivoire. *Journal of Animal & Plant Sciences*, 2015. Vol.25, Issue 1: 3787-3798.
- Kouamé N. N., N'guessan K.F., N'guessan W.P., Kotaix A. J. A. et Tano Y., 2021. Bionomics and Importance of an Emerging Pest *Pseudotheraptus devastans* (Distant) (Heteroptera: Coreidae) in the Cocoa Orchards of Côte d'Ivoire. *Journal of Experimental Agriculture International*, 43(5): 114-121.