



## Identification of *Tribolium castaneum* (Herbst) haplotypes, the pest of stocked millet in Senegal.

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### ABSTRACT

**Objective:** Millet is the staple food of millions of people living in the Sahelian zone and the tropical countries of West Africa. It occupies an important place in the Senegalese alimentation. The major damages to this cereal are caused by the beetle *Tribolium castaneum* Herbst (Tenebrionidae) whose adults give a repulsive smell of stored food and making them unusable. The objective of this study is to identify the different haplotypes of *T. castaneum* and their distribution in Senegal.

**Methodology and Results:** To achieve this, a sampling was performed in seven (7) localities of Senegal belonging to four agro-ecological zones. The DNA of each individual was extracted and the cytochrome b was amplified with Qiagen protocol and then sequenced. The results showed the existence of nine (9) haplotypes in Senegal and the haplotype Hap\_1 prevailed among them and was present in all sampled areas. Haplotypes Hap\_4 of Mbam, Hap\_3 of Diaroumé, Hap\_5 of Kounghoul and Hap\_7, Hap\_8 and Hap\_9 of Sandiara were individuals. Sandiara had a market for cereals, which may be a plausible reason for getting the largest number of haplotypes. The Hap\_5 comes in all networks as the central Haplotype. Changes of nucleotide composition did not affect the amino acid composition of the haplotypes. Thus, all the mutations were synonymous.

**Conclusion and application of results:** From 2012 to 2015, 9 haplotypes on 12 of *Tribolium castaneum* imposed themselves in these localities. 9 haplotypes were identified in Senegal including 6 (six) of them are individual. The locality of Sandiara has the largest number of haplotype of *T. castaneum* because of the very strong marketing of cereals and vegetables in that area. The mutations are synonymous; Haplotypes therefore would have the same behaviour towards biopesticides.

**Keywords:** *Tribolium castaneum*, Cytochrome b, haplotype, Senegal, identification, distribution