

ANALYSIS OF EFFICACY OF DIFFERENT CONCENTRATIONS DIFLUBENZURON IN TERMITE BAITS TREATING THREE EUROPEAN *RETICULITERMES* SPECIES

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Abstract In Europe there are up to 7 different species of underground termites. In France, Portugal and Spain there are 3 important species: *Reticulitermes grassei*, *Reticulitermes Lucifugus* and *Reticulitermes flavipes*). Presence of *R. grassei* in Spain, Portugal and France, *R. lucifugus* in France and Spain and *R. flavipes* in France and Spain (Tenerife) has been confirmed. There is a difference in behavior and activity in these three species that influence the response to treatment with anti-chitinizing baits. A greater voracity has been observed in *R. Flavipes* in relation to the other two species. *R. flavipes* is considered as an invasive termite in France and in the Canary Islands, being native to North America, which makes it a more dangerous termite due to its high voracity and mobility. A study of 52 antitermitic treatments in France has been carried out through the use of diflubenzuron (i.g.r. belonging to benzoylureas) at two different concentrations (0.25% and 0.50% w/w) embedded in cellulose powder. Diflubenzuron is an active ingredient with very low BFC which makes it non PBT substance. This formulation constitutes the bait used for the treatments (Exterra™ system). The distribution mechanism of the i.g.r. being based in the trophalaxis of termite colonies These treatments have been carried out in areas where the species to be treated was known in advance. Results of bait consumption in grams and elimination time in months for the control of each of the treated species have been achieved: *R. flavipes*, *R. grassei* and *R. lucifugus*. for each of the two concentrations of diflubenzuron used. The results denote efficacy of the two concentrations against the three termite species but a faster and less need for consumption for diflubenzuron at 0.50% being a substance considered non PBT by ECHA due his low bioaccumulation and half life values.

Key words Diflubenzuron, subterranean termites, *Reticulitermes*