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**PHOSPHINE RESISTANCE IN THE STORED PRODUCT INSECT PESTS
THE RUSTY GRAIN BEETLE *CRYPTOLESTES FERRUGINEUS* AND THE
GRANARY WEEVIL *SITOPHILUS GRANARIUS***

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ABSTRACT

Over the past three years several phosphine fumigations in the field failed to completely control the present insect pests. In imported cocoa beans from West Africa the rusty grain beetle *Cryptolestes ferrugineus* survived the regular dosage of 2 g/m³ and a 60 h exposure treatment. Repeated fumigations did not succeed in killing all granary weevils *Sitophilus granarius* in a local granary. The surviving insects were reared in the Institute for Stored Product Protection and investigated for their tolerance to phosphine. Experimental fumigations were also carried out as the quick-test for phosphine resistance proved they were resistant to this gas. All *S. granarius* insects of the resistant strain were completely controlled with an increased dosage of phosphine. In the cocoa storage, methyl bromide was used as a critical use exemption and led to complete control of all insect pests. The quick-test was considered for use in all cases prior to fumigation with phosphine. Should the result prove positive, the upper range of the registered dosage should be applied.