DEVELOPMENT OF METHYL BROMIDE ALTERNATIVE TREATMENT OPTIONS FOR KHAPRA BEETLE

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Khapra beetle, *Trogoderma granarium* (Everts), is the only stored product pest that is currently quarantined in the United States. Since 2008 annual interceptions of *T. granarium* at U.S. ports of entry have increased more than 1700%. In addition, recent detections of *T. granarium* life stages in the U.S. at warehouses and shipping facilities have resulted in the need for highly efficacious treatments to ensure populations are eliminated immediately after detection and do not result in long term establishment or spread to other areas. Recent EPA registration reviews have reduced the number of registered products labeled for *T. granarium* for shipping container and warehouse uses. As a result, state regulatory agencies have limited options when dealing with *T. granarium* detections. Current recommendations for khapra beetle control rely heavily on treatment with organophosphate insecticides and fumigation with methyl bromide

There is limited data regarding susceptibility of *T. granarium* to insecticides currently registered in the US to control stored-product insects, especially those classes of compounds registered recently. This is largely due to its quarantine status which prevents researchers working with it outside of an approved quarantine facility.

Here we report on a new project to evaluate efficacy of insecticides and develop new treatments for khapra beetle. Using small scale experiments designed to simulate warehouse applications several pyrethroid insecticides were evaluated across a range of label rates to determine their efficacy and residual activity on larval and adult stages. Results will provide treatment data for a number of insecticide products for control of both species as well as help determine if *T. variabile* is a viable surrogate species for similar tests, or larger scale control experiments.