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PHOSPHINE RESISTANCE AND SOLUTIONS

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ABSTRACT

Fumigation managers are concerned about insect resistance to phosphines since it is a serious problem of insect pests on stored commodity. Phosphine plays a vital role in fumigations based control strategies an insect-free status is the objective to achieve. Many years of experience indicates that weak resistance frequency has increased to the current rate. The presentation demonstrates how improving fumigation practices, can contribute to achieve the desired results and discusses the preventive steps needed to correct the problem. Important feature includes effective sealing of structure to retain the gas long enough exposure time to eliminate all life stages. . Another important step over the course of the fumigation is gas concentration monitoring conducted using a phosphine monitor. The most difficult point for gas to penetrate in the structure / commodity should be monitored. New structures / silos need to be designed to retain gas. There are several reasons why fumigation is not successful. There is no doubt that good fumigation practices also prevent insect survival, which is assumed as preventing further insect resistance. Sampling and laboratory test methods are available to check, if the insect species is resistant. Such test results inform the fumigator what measures need to be taken to increase phosphine fumigation effectiveness. By following correct fumigation practices, it is possible to avoid failures and enhance the life of phosphine as a fumigant. The paper presents results of fumigation using QuickPHlo-R phosphine generator resistant insects with nominal dose of 1 and 1.5 gms/ cub meter.

Key words: Phosphine resistance, storage insects, fumigation practices, phosphine generator