ON-THE-JOB FUMIGATION TRAINING – EDUCATIONAL AND INTERESTING

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Every fumigation is unique because of the environmental, biological and structural variables encountered. Fumigant characteristics and safety procedures are chemical dependent. In addition, no two customers are the same and their expectations may be difficult to ascertain.

In order to safely, efficiently, and consistently achieve good stored product pest control, a fumigator must be well grounded in key technical knowledge, experienced, and motivated to do a good job. Technical knowledge can be learned from classroom training and reading, but adults prefer to learn by doing, rather than listening. By definition, experience can only be obtained from actual field work. Motivation, well, that is not learned but instilled. Considering these points, on-site training appears to be a more logical approach to educating and motivating fumigators, but few such training programs are available.

Dow AgroSciences has been in the fumigation market for over 40 years with Vikane gas fumigant. Fumigation experiences over the last 7 years in the post harvest market with ProFume* gas fumigant has taught us that practicing Precision Fumigation techniques will provide financial and safety benefits to both fumigators and food industry customers. Precision fumigation can be defined as optimizing fumigant use to maximize efficiency and minimize risk.

To effectively begin the education of fumigators on the proper use of ProFume incorporating precision fumigation principles, a collaborative demonstration fumigation was conducted in the summer of 2003 in a Midwest pet food manufacturing facility. There were three main objectives.

1. To demonstrate precision fumigation techniques,
2. To reinforce good product stewardship practices, and
3. To demonstrate ProFume gas fumigant as a methyl bromide alternative for commodity and food processing facilities in terms of its efficacy, versatility and practicality.

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Over 50 participants representing Presto-X Company, several Copesan affiliates, Pet food manufacturers, Pet Food Institute, Univar, USDA-ARS, Kansas State University and Dow AgroSciences attended this fumigation. Since the participants had varied levels of expertise and expectations, several planning sessions were arranged to identify the educational and research needs of the participants in order to accomplish the objectives listed above.

The fumigated structure was an empty pet food processing facility located in Kansas. The 661,100 ft^3 structure was constructed with corrugated metal walls and concrete floors. Based on the historical pest records, Indian meal moth (*Plodia interpunctella*) was identified as the primary target pest. The entire building was fumigated without physically compartmentalizing it for gas introduction, monitoring and aeration purposes.

Participants were divided into four groups to maximize the opportunity for all participants to comment on and discuss the fumigation plan and procedures. Each group was given hands-on training on precision fumigation at four different stations around the fumigation site. Training topics included, in part: gas cylinder staging, introduction line set up, introduction and distribution fan placements, environmental measurements, gas monitoring line setup, gas monitoring equipment, clearance devices, equipment calibration, aeration plans, bioassay setup, secondary locks and other safety procedures, and how to use the Fumiguide* program for ProFume gas fumigant.

After each group had progressed through the four training stations, roll call was taken, final sealing completed and ProFume was introduced into the structure. During gas introduction, exposure period and aeration period, participants interacted with each other and the teachers to learn more about precision fumigation techniques.

Based on the results and feed back from participants it was clear that all three objectives were achieved during this fumigation. The success of this program was due to the cooperative efforts and communication among the participants and their motivation to learn in this field environment.

In general, there are very few organized hands-on training programs available for fumigators. The experiences gained from this field demonstration has prompted Dow AgroSciences to further refine our field training program and include it in the initial training of all ProFume fumigators during launch of this product.