

Session 7: Integrated pest control methods

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Rapporteur's Report

Four papers were presented that indicate the importance of integrating insect control methods. The first paper was presented by J.T. Criswell. Emphasis was placed on the need to create a team of those involved in the wheat system: the producer, elevator operator, terminal operator and processor. Decisions must take into consideration the insects, economics, and marketing factors. The ecology of grain storage must be considered as a living system and principles of population control dynamics, such as temperature and humidity factors, must be applied to improve insect control. Education of industry personnel is very important for successful implementation of insect control.

The second paper by G.H. Bell presented a model of applying phosphine as a gas in carbon dioxide (CO₂) for insect control in grain. The continuous flow injection system was more efficient than placing phosphide tablets in the grain. This method is also useful in treating localized "hot spots" of insects, thus reducing cost compared to whole bulk treatments.

Shlomo Navarro discussed use of methyl bromide and controlled atmospheres for causing Nitidulid beetles to migrate out of date fruits. Methyl bromide with CO₂, or low atmosphere pressures of 50 and 100 mm Hg gave excellent results.

R.G. Winks presented results of applying phosphine from cylinders in an airstream passing into grain storages. This method allows optimization of phosphine concentration, exposure time, and improved distribution through the grain mass. This results in good insect control, is safer for workers in the surrounding airspace and is more cost effective. This system may be used in older structures that are not sufficiently sealed.

Suggested directions for future work arising from this session are:

1. A need for more basic information on insects and their habitat to reduce insect population growth and improve control methods.
2. A need to develop combination treatments to meet the more stringent regulations now under legislation.
3. A need to improve communication between fumigant applicators, extension personnel, regulatory officials and the general public.