Inert Dusts — Session and Field Trip Workshop Summary

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Inert dusts were discussed during both the contributed papers and the field trip. Three types of use were outlined:

- admixture of dust with commodity to provide protection;
- use of inert dusts as structural treatments on walls and floors; and
- addition of dusts to the surface of grain bulks.

The first type of use ('protectant use') was discussed by the contributed papers for different commodities. Advantages include long periods of protection and no residues in food. Disadvantages include a higher angle of repose and increased dustiness, especially in bulk grain.

The second type of use, structural treatments, was discussed by the contributed papers and demonstrated on the field trip. Structural treatment can use either the dry dust or a slurry application of a mixture of dust in water. In cases studied, inert dusts applied dry, e.g. via a blow gun or Venturi applicator, are more efficacious, per unit weight, than the slurry. However, the slurry application involves less dust during application and a more lasting deposit, especially on vertical surfaces. Slurry application methods require an appropriate application system, and such systems were demonstrated by Ricegowers' Co-operative and by GrainCorp.

Application of inert dusts to the surface of grain has two uses. First, as discussed in the paper session, it can be used to supplement aeration by killing insects at the top of a cooled storage, where insects tend to congregate. Second, it acts as a gas barrier in situations where fumigant concentrations are adequate, except near the surface.

It was clear from the presented papers, which were principally on amorphous silicas, that not all silicas are equal in their efficacy against insects. It was also clear than some species are more susceptible than others to inert dusts.

Both the range of data presented, and the practical demonstration of Australian use, justify the session's conclusion that inert dusts are now part of the mainstream of stored product protection. That is, in considering how to solve a problem, the use of inert dusts should be assessed, together with other possibilities such as fumigants, trapping and physical methods.