USE OF CONTROLLED ATMOSPHERE FOR PEST CONTROL IN SILOS & BUILDINGS

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Summary
Controlled Atmospheres (CA), based on low-oxygen is commercially used world-wide to control insects in post harvest commodities. To reach low levels of oxygen, gastight areas are a bare necessity. Since a very large portion of the storage of food is done in silos, it is a natural way to progress the application of CA in silos.

The Dutch company EcO_2, founder of practical applications of CA, has conducted several tests to investigate the time frame for creating low-oxygen in silos and to determine the treatment time to control insects. Also gas tightness of the silos was measured.

Research focused on following points:
- Type of construction of silos and affect on treatment time?
- What are the gas tightness requirements of the silos?
- Influence of the sun?
- Monitoring of treatment possible and how to be set up?
- Cooling of silos possible with same installation?

CA treatments are proven in practice in 14 countries at the moment, and the test results of the silo treatment with CA were very promising. Within 3 – 12 days, with preferable product temperature of 20 – 30 C the insects are controlled effectively in all stages of development. CA are established by using the EcO_2 Converter System.

Advantages of CA treatment in silos
- no residues left on treated products
- no changes of creating insect resistance
- no degradation of the ozone
- low cost per m/tonnes

Further practical projects took place where HEAT was used to control insects effectively in flour mills (the Netherlands) and monumental buildings.

Keywords:
Controlled Atmospheres, disinfestations, stored product pest control, fumigation, insects control, silo treatments, converter system, heat, flour mills, monumental buildings.