Fumigation of Wheat in a High Vertical Bin with a Mixture of Methyl Bromide and Carbon Dioxide

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The efficacy of a fumigant mixture of methyl bromide and carbon dioxide was tested by fumigation of a 30 m high concrete bin with a capacity of 1200 m^3 of wheat. Methyl bromide dosage was 80 g/m^3 and that of carbon dioxide 125 g/m^3. The two gases were sprayed simultaneously into the headspace of the bin from pressurised cylinders.

Measurement of methyl bromide concentrations was done with the assistance of plastic tubes placed at various locations inside the bin before it was filled.

Good distribution of methyl bromide was obtained, producing lethal concentrations in all parts of the bin, including the bottom, after 24 hours. A slightly better and more rapid penetration was noted along the walls of the bin. The fumigation killed all insects present.

Methyl bromide/carbon dioxide mixtures are currently in commercial use in Israel. Dosages employed are 50 g/m^3 methyl bromide and 200 g/m^3 carbon dioxide in the form of dry ice.