A COMMERCIAL RECAPTURE SYSTEM FOR METHYL BROMIDE AT DALLAS/FT. WORTH INTERNATIONAL AIRPORT

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After three years in development and testing, a commercial methyl bromide recapture system was installed in February 1999, in a new state-of-the-art fumigation facility at Dallas/Ft. Worth International Airport. The system was developed in a joint project involving Great Lakes Chemical Corporation, GFK Consulting, and the USDA Agricultural Research Service.

The system installed at D/FW consists of a carbon bed containing 1,500 pounds of activated carbon. A blower, powered by a 5 horsepower electric motor, draws air from the fumigation chamber through the carbon bed and discharges the air stream to a roof-mounted stack. The system includes the necessary valves, flow indicators, and pressure gauges for operation and monitoring.

The D/FW system is designed to adsorb methyl bromide from fumigation enclosures up to 4,500 $ft.^3$ without slowing the normal fumigation cycle. The system can accommodate initial methyl bromide concentrations up to 10 pounds per 1,000 $ft.^3$. At the design flow rate of 750 cfm, ventilation of a 4,500 $ft.^3$ enclosure to a methyl bromide concentration of less than 500 ppm (2 oz. per 1,000 $ft.^3$) can be accomplished in 30 minutes or less.

When the methyl bromide concentration falls below 500 ppm in the fumigation chamber (as measured with a Fumiscope or similar device), the adsorber is bypassed and the ventilation is completed by exhausting directly to the stack.

After the system was installed, the performance was confirmed with tests using a 400 $ft.^3$ temporary enclosure containing methyl bromide at a concentration of approximately 100 oz. per 1,000 $ft.^3$. Because of the small size of the enclosure, ventilation through the recapture system was complete in less than 5 minutes. Methyl bromide was not detected in the exhaust stack from the system during the ventilation phase.

Since installation, the system has been in routine use with no operational problems.