

ProFume®

100% CONTROL OF RICE FACILITY IN 18 HOURS.

GAS FUMIGANT



Taking fumigation to the next level

A rice processing facility located in Louisiana was one of the sites selected to participate in the ongoing testing of ProFume® gas fumigant as part of the development of this fumigant. This particular facility presented some challenges: its location in the heart of U.S. rice country where conditions warrant year-round pest control, and its age – nearly 100 years old.

Fumigators administer ProFume using Precision Fumigation™ tools and techniques to help optimize dosage, application rates and timing. Precision Fumigation is rooted in four interrelated factors related to control: exposure time, temperature, Half-Loss Time (HLT) and pest. By modifying any one factor, others can be changed to meet specific goals, including time savings, gas cost savings or a speedy return to production. This allows for a customized fumigation management plan per company and per fumigation.

100% control in 18 hours

ProFume fumigation specialists and fumigators worked with the facility in November 2002 to test ProFume. The fumigators prepared the rice mill – more than 1 million cubic feet – for fumigation using Precision Fumigation tools and techniques. A majority of the time was spent sealing “doghouses” on the roof of the mill which, due to their small volume and location, act as chimneys for the fumigant. In addition, monitoring lines were

placed throughout the structure so, once the fumigant was introduced, fumigators could track the fumigant concentration to ensure the proper dosage was achieved or to make adjustments if necessary.

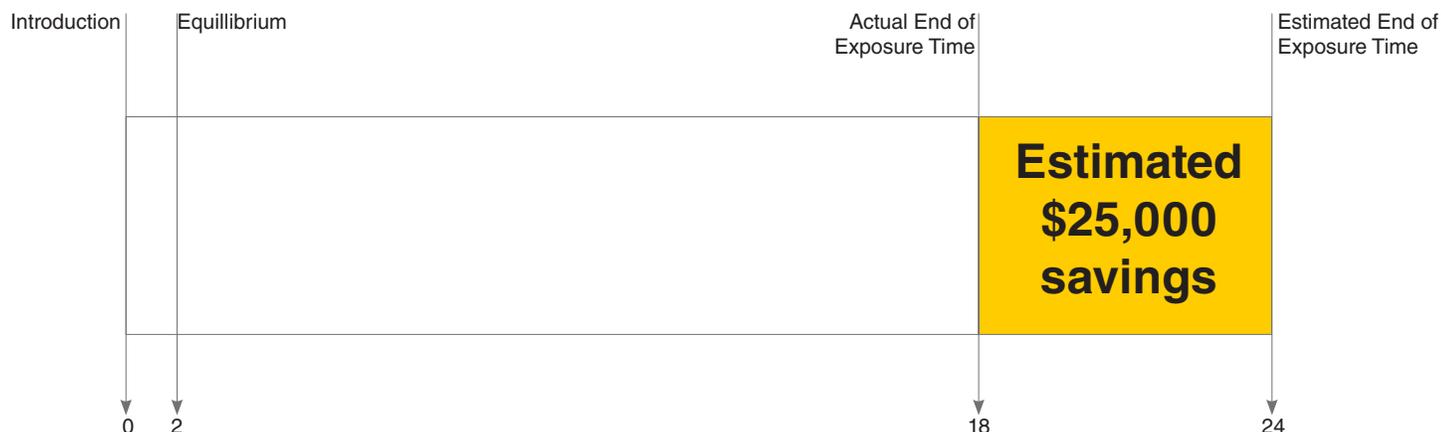
Based on data entered into the Fumiguide™ program for ProFume gas fumigant, including target insect species (red flour beetle and lesser grain borer), temperature (65 F), exposure time (24 hours), an estimate on HLT (four to six hours) and other specifics, this fumigation required 3,000 pounds of ProFume to achieve control of the target pests. The gas was released from outside the mill through leak-proof introduction hoses that were strategically placed throughout the facility to optimize gas distribution. Two hours after the initial gas introduction, concentration levels inside the structure reached equilibrium.

The effort invested in sealing the doghouses and storage areas paid off. Monitoring data entered in the Fumiguide showed that the building confined ProFume better than originally expected, resulting in a longer HLT of eight hours. This allowed the lead fumigator to end the exposure period after only 18 hours instead of 24. As a result, fumigators were able to fully aerate and clear the building for re-entry five hours ahead of schedule and the rice facility could resume production earlier than originally planned. Assuming an average cost of \$120,000 per day to shut down a mill, returning a facility to production five hours earlier could result in approximately \$25,000 savings.

In addition, 10 sets of bioassays containing red flour beetle eggs, larvae, adults and lesser grain borer adults were placed in known insect harborages throughout the facility to test for control of the target pests. A third-party evaluation after the fumigation revealed that ProFume achieved 100 percent control of these insects at all life stages.

The sanitation supervisor of the Louisiana mill found various stored product pests dead after the fumigation with ProFume® gas fumigant. “We have never seen this after methyl bromide fumigations. It looks like sulfuryl fluoride does work better,” said the sanitation supervisor.

Fumigation Timeline



Advantages of treatment using ProFume® gas fumigant

The rice industry can rely on ProFume because it offers clear advantages over other treatment methods. The broad-spectrum postharvest fumigant meets the industry's needs by providing efficacy without adverse effects on the rice and sensitive electronic equipment in the facility. Field trials have shown that ProFume quickly penetrates the fumigated area and controls all life stages of a wide spectrum of insects as well as rodents.

By considering all control variables, Precision Fumigation techniques can be tailored to meet each company's business needs and time schedules, meaning more utilized production time and profit potential. In addition, these techniques also help ensure ProFume® gas fumigant is used more efficiently – helping facilities manage costs while providing the superior pest control they demand.

"We are very impressed with how the fumigation plan was put together and executed," commented the quality assurance manager after the fumigation.

ProFume is manufactured by Douglas Products – a company with more than 50 years of fumigant experience and entomology expertise. The active ingredient is sulfuryl fluoride, a non-flammable, non-corrosive, odorless gas with high vapor pressure.

Technology sets ProFume apart

No two fumigation jobs are identical because of the multitude of structural, environmental and fumigation variables. As such, the amount of fumigant required for any given fumigation is influenced by the circumstances of each fumigation situation. Douglas Products offers a unique computer application – the Fumiguide program for ProFume gas fumigant – which enables fumigators to tailor fumigation procedures to achieve maximum efficiency. ProFume meets the needs of companies by providing efficacy, flexibility, customization and superior pest control while helping to alleviate some of the downtime associated with fumigation in order to help manage costs.

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