# PROFUME® IN AUSTRALIA FUMIGATION AT LOW RATES IN LARGE BUNKERS OF OF GRAIN

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SA Rural Agencies is a 100% privately owned Australian company established since 1984. Over the years SA Rural Agencies has built up a strong position as the leading supplier of a comprehensive range of pest management and fumigation products and services to established agents and distributors in all regions of Australia and many countries in the Asia Pacific region. SA Rural Agencies is well regarded as being the most proactive company in the region developing new, alternative and innovative products to expand its range, and continues to experience rapid organic growth in all divisions of the company whilst maintaining an exceptional history of compliance and performance.

In conjunction with Dow Agrosciences, SA Rural Agencies saw the potential of Telone®, Chloropicrin and ProFume® as the way forward to introduce viable replacements for Methyl Bromide in Australia.

ProFume® is currently registered for a wide number of different uses in Australia.

In all trials and work done in Australia, the results to date have been outstanding.

In Australia we have fumigated mills, a number of houses, almond warehouses and other nuts, timber including furniture and dried fruit. All have proven ProFume® to be a viable alternative to Methyl Bromide, and in recent times, grain in silos and large bunkers of up to 50000T as a Phosphine replacement or ”break” strategy, and this is the basis of my talk.

Our first trial was a 29000T bunker in Goondiwindi, Queensland.

After entering the area volume, target pests, a guestimated half loss time, exposure time of 5 days and temperature on the Fumiguide (program for ProFume® gas fumigant), the program calculated the dosage thus providing a customised fumigation guide and planned CT.

Monitoring was conducted with a Fumiscope at about 2 hrs, 12 hours, then each 24 hrs and before final release at 5-14 days.

Insects in cages were placed throughout the bunker at different depths, and in areas where there were concerns that Profume may not penetrate.

This bunker was fumigated and a zero reading was found 48 hours after aeration. All caged insects were removed and after some 8 weeks, we were advised that all test adults, pupae, larvae and eggs had been killed (i.e. no insects survived). We have since fumigated many bunkers with the same result in terms of insect kill.

Aeration was done by opening each end and setting up large fans. It took hours to get readings below the 3ppm concentration of ProFume® which allows safe re-entry to fumigated structures, fumigated areas and the fumigated grain.

We treat each monitoring point as a separate site since the gas moves around a bunker, depending on the sun, wind, cold and heat. The CT is considered to be obtained when the lowest one reaches the required CT.

Start of Aeration: Large fans were used to suck the ProFume® out.
Aeration time taken from 24-48 hours.
End of Aeration: Structure was checked for clearance. Fumigated space was cleared for re-entry using the Interscan.
Conclusion: Fumigation successful.

**Fumiguide Details for Grain Bunker**:
Pest species: Confused flour beetle, red flour beetle, lesser grain borer and flat grain beetle.
Dosage: High -
Commodity Temperature: Top: 24.6 Middle: 23.4 Bottom: 22.3
Fumigation Duration: 7 days, 168 hours.
Total Volume Fumigated: 37,200$m^3$ , 29,016 Tonne
Fumigation dosage: 16 gms/$m^3$
Amount of fumigant used: 608kg
Comments: Relatively calm for the duration of the fumigation. Wind is a major issue as it can draw out ProFume®, due to positive and negative pressures caused by strong wind movement.

ProFume® is used for fumigation in hay and seed storage, baled hay for animal feed and pet food, seed storage facilities holding grain and in situations including dwellings, mills, buildings, warehouses, construction materials, furnishings (household effects), shipping containers (including those containing pallets, machinery and dried fruit) (eg apricots, dates, figs, prunes, raisins and sultanas). Nuts (eg almonds, cashews, chestnuts, hazel nuts, macadamias, peanuts, pistachios and walnuts) Also vehicles including cars, surface ships, rail cars and privately owned yachts, silos and, of course, bunkers.

We have concluded from personal experience that the ProFume® package including the Fumiguide and Dow Agrosciences Precision Fumigation training program offers a technically and economically a viable alternative to the use of ozone depleting methyl bromide. More importantly for Australia (and potentially elsewhere) ProFume® is proving to be an alternative fumigant using low dose, long term 5-14 day fumigations to control all life stages of stored grain insect pests.

We would like to gratefully acknowledge the professional assistance of Dr Paul Hughes, George Saville and Dan Connelly from Dow AgroSciences Australia in helping SA Rural Agencies promote and develop ProFume® in Australia, and also to the guys in America who have been supportive.