

SPECIAL FEATURE



Flame sterilisation can help to eradicate disease in poultry sheds

By *PETER BEDWELL*

Sydney based poultry shed equipment specialist Gameco, is importing a range of liquid propane powered flame sterilisation tools from Flame Engineering Inc of Kansas, USA.

The equipment can be used in a range of agricultural industries but the latest item in Flame Engineering's line up is the Red Dragon Poultry House Flame Sterilizer.

Amongst the many benefits Flame Engineering claim for the Red Dragon Poultry Shed Sterilizer is that it flares off ammonia vapours, is less expensive than many chemically based alternatives, does not involve run-off residues or potential

water source contamination and the intense heat generated by the Red Dragon (approx 750 degrees centigrade) effectively kills pathogens.

Because it is a non-chemical solution to pathogen control the equipment is finding favour with organic and other alternative production methods, according to Flame Engineering.

Best results have been obtained with the unit by flaming bare floors and litter after clean out and following de-caking.

The business end of the Red Dragon consists of 6 LT 2x8 liquid propane torches that project intense sweeping flames under

the substantial steel hood.

The Red Dragon is designed to fit a conventional tractor three-point hitch with a 12-volt ignition system that connects to the tractor's battery.

The flamer is designed to carry a standard 120 (US) gallon propane tank, but smaller tanks can be used.

In field trials, with the unit travelling at 1/2 mph gas consumption was approximately 35 gallons flaming a typical 40'x 300' poultry shed.

Flaming is not a new technique by any means and Flame Engineering record flaming equipment being used to sterilise

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◁ paddocks and livestock sheds in the 1930s.

More recent demands by farmers in the booming organic sector (including poultry) for non chemical disease control options and the need for added safeguards when combating critical diseases like AI by utilising flaming as an adjunct to chemical based sterilisation, have lead to a resurgence in flame based disease or pest control in both cropping and livestock industries in the US.

After AI outbreaks in early 2004 in the Texas poultry industry, the Texas Animal Health Commission stipulated that heat should be used to sterilise layer houses and surrounding land after conventional clean out and disinfectant operations had been completed.

The outbreak in the US\$1 billion Texan poultry industry involving only two farms but lead to a halt in valuable exports though the disease (H5N3 AI), was quickly isolated and contained.

According to reports in the US publication Butane and Propane News, an inspector with the Texan Animal Health Commission insisted that the only way to completely rid the facilities of pathogens was to take the additional step of flaming the floor of the four sheds affected, along with the driveways on the farms and the area up to 200 feet away from each shed.

The report reveals that specific recent data about the effectiveness of flaming and how best to employ the technique is in short supply.

Growers in the US who have suffered intractable disease problems and ammonia emissions and have used the Red Dragon



Top: Temperatures reach around 750 degrees C under the steel hood. Above left: Red Dragon Flame Sterilizer uses standard 120 (US) gallon tank. Above: Red Dragon effectively kills pathogens in poultry sheds.

unit report good results, according to the report.

Demonstrations of the equipment to the United States Department of Agriculture (USDA) have taken place and Flame Engineering's Agricultural Manager Steve Koch has been involved with product trials at the University of Delaware which is looking at more ways to reduce ammonia emissions in poultry sheds.

The report by Butane-Propane News concludes with the news that Dr Susan Watkins of the University of Arkansas has conducted research on heat sterilisation in poultry sheds and that her findings add support to grower's views that have used

flame based sterilisation in their sheds.

Principally pathogens reduced were e. coli, coliform and salmonella leading to decreased mortality levels and an increase in the overall health and size of broilers.

Gameco's Sales Manager for poultry products, Phillip Lourey, anticipates potential demand for the Flame Engineering Red Dragon from both alternative and conventional growers in both layer and broiler industries.

"The equipment would also have applications on extensive poultry farms where run off into protected or sensitive waterways or storage dams was an issue as well as disease control," Mr Lourey said.