



FEEDLOTS

Nuisance flies on cattle feedlots – key research findings

While the feedlot industry has significantly improved manure management practices over the past decade, thereby reducing both odour and fly problems, flies continue to be a seasonal problem at many feedlots.

The threat of insecticide resistance and a desire to minimise the use of chemicals have also underpinned the development of a more integrated approach to fly control. Furthermore, the impact of flies on production and animal and human health and welfare are important challenges confronting the feedlot industry.

In conjunction with the Department of Primary Industries and Fisheries, Queensland (DPI&F), MLA has recently funded research to investigate nuisance fly species, their population seasonality and control in Australian beef cattle feedlots.

The project included an industry survey, insecticide resistance testing and comprehensive monitoring of fly populations at a southern Queensland feedlot over a two-year period, complemented by short-term monitoring at a central Queensland and a central New South Wales feedlot.

Key points

- Research provided important information on fly and parasite populations on Australian cattle feedlots
- House and stable flies breed on the feedlot whereas other flies generally do not
- Resistance to some insecticide was found in house flies and this should be considered before using chemical treatments
- Biological control agents play an important part in fly control and should be preserved and encouraged

Industry survey

- 83% of operators indicated that flies were a problem in their feedlots
- 58% of operators used some form of chemical fly control, with baits being the most common form, followed by sprays and traps

Adult fly population monitoring

- The fly species most commonly trapped on the southern Qld feedlot were house flies (38%), bush flies (15%), stable flies (1.3%) and blowflies (44%)
- All fly numbers were low during winter, being strongly influenced by temperature
- House fly populations had extended peaks from late spring to late autumn, with minor peaks following rainfall
- Bush fly populations had shorter peaks in late spring and late autumn
- Stable fly populations also had shorter peaks in summer and late autumn
- House and stable fly populations were higher within the feedlot complex than outside, however blowfly and bush fly catches were generally higher outside the feedlot
- There was a strong correlation between adult fly numbers and behavioural responses of cattle – eg tail swishes, ear flicks and head tosses
- The number of leg stomps correlated well with biting stable fly populations
- Cattle behaviour can provide a good indication of fly numbers
- Insecticidal treatments had little if any impact on adult fly numbers

Larvae/pupae monitoring

- House and stable flies breed on the feedlot whereas blowflies and bush flies generally do not
- Flies breed right across the feedlot wherever there is undisturbed manure, spilt feed and moisture
- The main fly breeding sites were under fence lines, in drains, sedimentation basins, silage pits and in the hospital/induction area that may not be cleaned as thoroughly as other areas of the feedlot
- Pen and under-fence cleaning resulted in a relatively short-term reduction in fly breeding
- Insecticidal treatments had little if any impact on fly breeding

Chemical resistance testing

- Flies from southern Qld, central Qld and central NSW feedlots showed moderate resistance to the organophosphate diazinon
- Flies from each of these feedlots also showed a significantly reduced knockdown response to an azamethiphos-based fly bait

Biological control agents

- Eight species of parasitic wasps were identified on the southern Qld feedlot where they killed at least 27% of the developing flies, indicating considerable promise as biological control agents
- Predatory mites that feed on fly eggs and larvae were found on 3.8% and 3.2% respectively of adult house and stable flies – their contribution to the biocontrol of flies has not yet been established
- Entomopathogenic fungi isolated from feedlot flies were highly effective in killing house flies, making them potential candidates for the development of a fungal biopesticide

Regional differences

- The same species of nuisance flies were identified at the southern Qld, central Qld and central NSW feedlots, although there were some differences in the relative abundance of the various species
- House flies were the most common species at all feedlots, however, stable flies were more abundant in the central NSW feedlot
- The central Qld feedlot scored the highest trap catches



The bottom line

This project has provided a significant quantity of new data regarding nuisance flies on cattle feedlots. It has also confirmed some observations made by operators over years of experience and provided new insights on how to manage nuisance flies more effectively.

The major research findings have been incorporated into practical recommendations for the development and implementation of integrated pest management (IPM) programs tailored to suit the specific needs and management preferences of individual feedlots. These recommendations are presented in tips & tools FL15: *Integrated pest management for nuisance flies on cattle feedlots*.

Identification of nuisance flies is an important element of the recommended IPM program. Further information on identifying the major nuisance fly species in Australian cattle feedlots can be found in tips & tools FL14: *Feedlot flies – identifying the problem and some solutions*.

For more information

To obtain either of the MLA tips & tools or a copy of the full report on Nuisance flies on cattle feedlots (FLOT.306) – call the MLA Producer Hotline on 1800 155 900

Key contact

Des Rinehart, MLA
Ph: 07 3844 3003
Email: drinehart@mla.com.au



Level 1, 165 Walker Street,
North Sydney NSW 2060
Ph: 02 9463 9333
Fax: 02 9463 9393
www.mla.com.au