

FACT SHEET

Flystrike chemical resistance



FLYSTRIKE

Australian Sheep producers are aware of the severe health impacts Flystrike can have on their sheep flock, but what they may not know is it's \$173 million dollar cost to the industry annually. It is one of the most significant health and welfare concerns within the industry, especially affecting those producers who experience a warm, humid start to spring.

WHAT IS FLYSTRIKE

Flystrike is the result of *Lucilia cuprina* (the common Australian Sheep Blowfly) laying eggs in damp/dirty wool which quickly turn into maggots. The maggots, which thrive off protein, make their way to the flesh of the sheep. This cycle results in a bacterial infection, in turn causing a foul smell, attracting more flies which follow the same cycle.

THE SCARY REALITY

In recent years Victorian sheep producers have been experiencing shorter protection periods from chemical flystrike products than what the label claims. When this was investigated, it was found that a cause was improper application or heavy rain following the application. However, in several cases the presence of chemical resistance has been linked to both dicyclanil and cyromazine. Really, this news does not come as much of a surprise, as like all pests, flies are likely to develop a resistance to insecticide treatments, therefore, successful prevention comes down to effective management.

PREVENTION IS KEY

Preventing flystrike is the most economical way of managing flystrike resistance. Producers should be thinking strategically when it comes to preventing flystrike on their farm. There is not a great collection of chemicals to use for flystrike, so producers must look for alternative ways to prevent it.

These include:

- ▶ Crutching and shearing – knowing the times of year that flystrike is at the biggest threat to your sheep flock.
- ▶ Controlling worm egg count (WEC) - high worm egg count can cause scouring, which creates a haven for fly infestation on the animal's breech.
- ▶ Genetic options (e.g. plain bodied).
- ▶ Correct tail docking length.
- ▶ If you don't know ask for help- call your local veterinarian.
- ▶ Chemical application- read the label, know the chemical group, apply effectively at the correct dosage.

Producers should be aware of the impact genetic composition has on the probability of their flock being affected by flystrike.

Selecting animal genes that have less wrinkles, increased resistance to worms, shorter fleece length etc. will all contribute to the likelihood of the flock developing flystrike.

To learn more about this visit Stock Sense flystrike [news release](#) or flystrike [fact sheet](#).

REDUCING INSECTICIDE RESISTANCE

Creating sheep that are flystrike resistant can take several years, so when producers are faced with a flystrike outbreak, under animal welfare regulations they must be treated. When treating with chemicals it is recommended that you follow a Resistant Management Strategy, like the one shown below:

1. Use an integrated approach to reduce reliance on insecticide
2. Know your chemical groups
3. Rotate chemical groups when and where practical
4. Minimise the number of treatments applied in a season
5. Consider treatments for other parasites, particularly lice treatments
6. Apply insecticides carefully and strictly as specified on the label
7. Monitor for flystrike frequently
8. Collect and kill all maggots from fly struck sheep.

Understandably, some strategies are harder to meet than others and take several years to start showing effectiveness. However, it is important to incorporate some steps of the strategy where possible.

SIGNS THAT INDICATE YOU MAY HAVE CHEMICAL RESISTANT FLYS

1. Shortened protection period as claimed on the product label.
2. Flystrike in several sheep.

Check that:

1. The sheep affected were treated.
2. The chemical was applied exactly as the label suggests.
3. The wool length was adequate to retain treatment.
4. Dags and wool did not affect the penetration of the product.
5. Heavy rain did not occur following treatment

TAKE HOME MESSAGES:

- ▶ Victorian, NSW and South Australian sheep producers have been experiencing shorter protection periods from chemical flystrike products than what the label claims.
- ▶ Prevention is key- create a system that is working towards creating a sheep resistant to flystrike
- ▶ Insecticide resistance occurs when producers use the same chemical group each treatment.

Once you have eliminated all of the above, it is advised that the next step is to call the manufacturer or your local veterinarian for further investigation.

CHEMICAL RESISTANCE TESTING

If you believe your flock is showing resistance to chemical usage testing can be carried out by the NSW Department of Primary Industries and is available to producers across Australia. You will need to supply the laboratory with a large sample of live healthy *Lucilia cuprina* maggots.

For more information on the chemical resistance testing click on the following link: [FlyBoss](#)



Image 1. Sheep infested by maggots

ADDITIONAL RESOURCES

[ParaBoss](#)- Online resource which will assist you in designing the control management plan for flystrike and avoiding resistance.

[FlyBoss](#)- Online resource involving additional resources on how to best manage flystrike.

[AWI](#)- Australian Wool Innovation has an additional factsheet and other helpful resources.

Table 1. Common chemical groups and active ingredients for flystrike prevention/treatment. Table was sourced from Australian Wool Innovations

CHEMICAL GROUP	CHEMICAL ACTIVE	EXAMPLE PRODUCT	METHOD OF APPLICATION ¹	PROTECTION PERIOD (WEEKS) ²
Insect growth regulator (IGR)	Cyromazine	Vetrazin® Vetrazin® Liquid	Spray-on Jetting/Dipping	11 Up to 14
	Dicyclanil ³ • 12.5 mg/ml • 50 mg/ml • 65 mg/ml	CLiKZiN®	Spray-on	Up to 11
		CLiK®	Spray-on	18–24
		CLiK® Extra	Spray-on	Up to 29
Neonicotinoid	Imidacloprid	Avenge & Fly®	Spray-on	Up to 14
Macrocyclic lactone (ML)	Ivermectin	Coopers® Blowfly & Lice	Jetting	Up to 12
Synthetic pyrethroid (SP)	Alphacypermethrin ⁴	Vanquish®	Spray-on	Up to 10
Spinosyn	Spinosad	Extinosad® Eliminator	Jetting	4–6

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FURTHER LINKS

Agriculture Victoria

[Support and resources for preventing flystrike](#)

[Support and resources sheep notes resistance to insecticide in blowflies](#)

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