

# Sheep & Beef Talk

June 2017



## Lice in Sheep:

### Why do we get lousy sheep?

It is very easy when you notice that you have lousy sheep to blame the neighbour, but most commonly the reason is that they were not all removed the last time you treated. This is due to how lice work:

1. Lice cannot jump or fly. They get onto a sheep by crawling from one sheep to another, typically when a mob is in the yards.
2. Lice will only survive a few days off a sheep in ideal conditions e.g. on the rails in the woolshed or on moccasins. They will only last a few hours on wool caught on a fence.
3. Lice are slow to build up numbers but females can live for nearly 2 months.

The graph on page two shows the build up in lice numbers per wool parting in a mob of ewes after contact with lousy sheep. With approximately monthly monitoring by lice counting it took about 6 months to start finding lice in the mob.

4. Despite having effective chemicals available it is almost impossible to eradicate lice. It didn't happen after 140 years of statutory dipping with nasty chemicals and plunge dipping. It is not going to happen now with nicer chemicals and fast, modern application methods. It only takes one adult lice on one sheep to keep the lifecycle going.

We are aiming for lice control, not lice eradication.

### Why does dipping appear to fail sometimes?

There are four reasons you may be seeing lice in your sheep shortly after treatment:

1. The wrong product was used
2. The product wasn't applied appropriately
3. Treated sheep have been exposed to untreated sheep
4. The lice are resistant to the product

#### 1. Wrong product:

Different products have different label claims depending on length of wool and type of wool. No matter how well you apply a product if there is too much wool, especially if it is fine wool, the product will not be able to work effectively. Treat immediately off-shears to get the best result from your dip.

Remember that the IGR's (actives are diflubenzuron or triflumuron) only kill developing lice as they moult so any adult lice survive.

#### 2. Incorrect application:

Products must be applied strictly according to label directions. Poor application is the most likely reason for dipping failure, regardless of the method or chemical being used.

With pour-ons we can see:

- under-dosing when the assumed weight is wrong or the gun isn't working properly

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Havelock North  
P 06 877 8050

Gisborne  
P 06 868 5151

Wairoa  
P 06 838 6099

Te Awamutu  
P: 07 872 0240

Otorohanga  
P: 07 873 8275

Te Kuiti  
P: 07 878 0020

King Country  
P: 07 895 7585

Turangi  
P: 07 386 0220

www.vetent.co.nz  
info@vetent.co.nz

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- ❑ the wrong gun being used
- ❑ poor coverage due to poor application technique

With saturation dipping and jetting races we can get under-dosing when:

- ❑ the volume required to saturate the sheep is underestimated or is not applied when sheep run through too fast or let out too soon
- ❑ the volume of the dip sump is wrong
- ❑ the mixing rate is wrong
- ❑ when recycled wash water is used and the chemical is no re-charged
- ❑ only the nozzles for fly control are used, meaning the underside of the sheep isn't covered



Fig. 1 Lice eggs, nymphs and adults on a very lousy sheep. The adult lice are 1- 2mm long.

3. Mixing of treated and untreated sheep:

Untreated sheep (including lambs at foot) provide a source of lice and with some pour on products it can take several weeks for all lice to be killed. When using an IGR it will not kill adult lice. Try to maximise the effectiveness of the lice programme by:

- ❑ Clean musters
- ❑ Keep strays out
- ❑ Quarantine newly purchased sheep
- ❑ Avoid split shearing or keep stock shorn at different times separate from each other
- ❑ Don't treat ewes with lambs at foot (unless the lambs are also treated)
- ❑ Don't treat pregnant ewes within 6 weeks of lambing
- ❑ Remember it takes about 4 weeks for any pour-on product to kill all lice

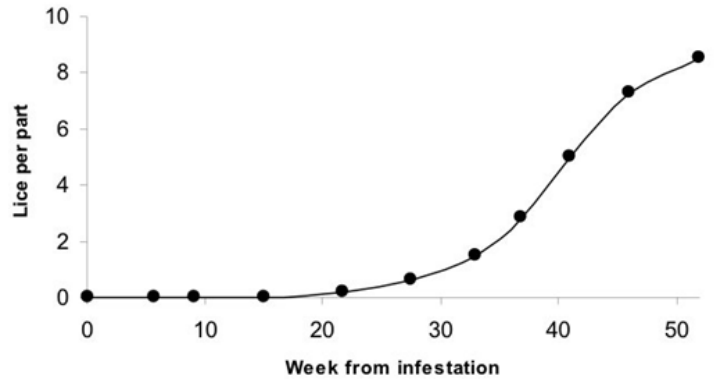


Figure 2. Typical pattern of lice build up in a mob following contact with a lousy sheep.

Source: [www.liceboss.com.au](http://www.liceboss.com.au)

4. Resistance to product:

Mother Nature has given some lice the ability to survive dip chemicals. Resistance develops when lice are exposed to a dip and some survive to go on to breed. If we keep using the same chemical or chemical group, these resistant lice will survive and breed, increasing their numbers until they make up the majority of the population. See table below for chemical brands and group names.

Resistance to the synthetic pyrethroids has been identified in NZ since the 1990's. Resistance to the IGR's has been confirmed in Australia ten years ago and is suspected in NZ.

Slowing the development of resistance involves obeying the basic principles of lice treatment: Use the right product at the right time and apply it correctly at the right dose rate. Other strategies include:

- ❑ Avoid mixing treated and untreated sheep (including lambs at foot). While there is still protective levels of chemical in the treated sheep this is not an issue (except adult lice when an IGR has been used). However, when chemical levels start to drop in the treated sheep, lice that transfer may be able to survive and go on to breed a more resistant lice population.

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- Rotate products from different chemical groups for consecutive treatments (remember that there may be several different products within a group so changing product name may not be changing chemical group. See table below for chemical groups and brand names)
- If possible use products from different chemical groups for controlling lice and flystrike in the same year.

- Avoid using long wool treatments where possible as these do not eradicate lice and may allow resistant ones to survive and breed.
  - If you have used a long wool treatment use a chemical from a different group after shearing.

If you have used a long wool treatment use a chemical from a different group after shearing. If you have any questions or concerns about lice control on your property contact the VetEnt team at your local clinic. Each farm is different so talking through lice control for your property is really important to ensure you are getting the best advice possible.

Chemical group	Active ingredient	Brand names	Comments
Organophosphates (OP's)	Diazinon	Top Clip	Nasty for humans
Organophosphates (OP's)	Propetamphos	Seraphos 1250	Nasty for humans
Synthetic Pyrethroids (SP's)	Cypermethrin	Cypercare	Resistance common
Synthetic Pyrethroids (SP's)	Deltamethrin	Wipeout	Resistance common
Synthetic Pyrethroids (SP's)	Alpha-cypermethrin	Vanquish	Higher concentration SP but resistance is still likely.
Insect Growth Regulator (IGR's)	Diflubenzuron	Fleecemaster, Magnum, Zenith	Resistance likely. Will not kill adult lice
Insect Growth Regulator (IGR's)	Triflumuron	Exit, Zapp	Resistance likely. Will not kill adult lice
Spinosyn	Spinosad	Extinosad, Expo	Expo (pour-on) not recommended by VetEnt. Extinosad (saturation) only recommended for emergency treatment of long-wool sheep so will not kill all lice.
Combination	Triflumuron and Cypermethrin	Exit Extreme	Resistant likely to both actives
Combination	Spinosad and Cyromazine	Cyrex	Only recommended for emergency treatment of long-wool sheep so will not kill all lice. Cyromazine only active against fly, not lice.
Combination	Triflumuron and imidacloprid	Zapp Encore	Likely to give a better lice kill than triflumuron alone as imidacloprid kills adult lice and suspected triflumuron resistance. Imidacloprid has no persistent activity