

Chemicals registered to treat lice and flystrike

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NSW sheep producers spend more than \$30 million per annum on chemicals to treat or prevent infestations of body lice (*Bovicola ovis*) and flystrike by the sheep blowfly (*Lucilia cuprina*). Clearly, with this level of investment it is important that they make wise treatment choices and only use products registered for these purposes.

Product choice is likely to be influenced by price, safety to the user, effectiveness of the product and the residue consequences of treatment such as withholding period, export slaughter interval and market access.

Chemical residues in wool can threaten access to some markets e.g. European processors. 'No chemical' or 'low chemical' residue wools may have a market advantage over wool with residue levels above, for example, the EU eco-label residue limit.

Woolgrowers should try to reduce their reliance on chemicals and only apply chemicals to sheep in strict accordance with label directions.

Benefits of producing low or no pesticide residue wool

Reduced cost of production due to less chemical use.

Reduced occupational health and safety risks.

Access to particular wool markets by meeting customer needs.

Maximised market access for 'clean' wool and perhaps influence wool prices by attracting more competition for clean wool.

Chemical groups

There are currently seven main types of chemical available to control or eradicate sheep lice and blowflies:

Organophosphates (OP): Diazinon, propetamphos, temephos - interfere with nerve signal transmission.

Synthetic pyrethroids (SP): Alphacypermethrin, cyhalothrin, cypermethrin, deltamethrin – over exciting the insect nervous system causing paralysis.

Insect growth regulators (IGR's): Benzoylphenyl ureas, triazine and pyrimidine derivatives - diflubenzuron, triflumuron, cyromazine, dicyclanil - prevent an insect from reaching maturity by interfering with the moulting process.

Macrocyclic lactones (ML): ivermectin, avermectin, abamectin, – block nerve signals.

Spinosyns: spinosad - over exciting the insect nervous system causing paralysis.

Neonicotinoid: imidacloprid - overstimulate the insect nerves.

'Others': principally magnesium fluorosilicate (registered for use in organic production systems – gut poison), amitraz, piperonyl butoxide, rotenone, and sulphur are additives that enhance the activity of other chemical controls.

Know the risks

The different chemical groups have various degrees of risk relating to operator health, pest resistance and wool residues as shown in Table 1.

Understanding these risks will help when deciding which (if any) chemical is to be used.

Table 1. Potential risks associated with use of and exposure to insecticides.

Group	Human health ⁴	Pest resistance	Raw wool residues
Organophosphate (OP)	High*	Common in flies & maggots	low
Synthetic Pyrethroids (SP)	Medium	None in flies Common & high in lice	High in LW ¹
Insect Growth Regulators (IGR) Diflubenzuron/ triflumuron	Low	Common & high in maggots ² Common & high in lice	Medium in LW ^{1,3}
Insect Growth Regulators (IGR) Dicyclanil/cyromazine	Low	Low level resistance detected ⁵ ; Not applicable to lice	Medium in LW ^{1,3}
Spinosyn	Low	None reported	Low
Macrocyclic Lactones (ML)	Low	None reported	Low
Magnesium Fluorosilicate	Low	None reported	Low
Neonicotinoid	Low	None reported	Low

Source: Liceboss (www.liceboss.com)

* High human health risk is in relation to diazinon. Some organophosphates pose a low human health risk e.g. temephos.

¹ LW – Long wool is defined as more than 6 weeks after shearing.

² Fly resistance to diflubenzuron (Dfb) has been reported. Diflubenzuron is no longer registered in Australia for the prevention of flystrike on sheep.

³ Except CLIK, this can be used up to 3 months before shearing and cyromazine products up to 2 months before shearing; CLIKzin can be used up to 1 month before shearing.

⁴ See Special Note: Human health risks

⁵ At time of writing low level resistance had been detected in only one population of sheep blowflies. Thorough application of the correct dose of dicyclanil or cyromazine is still effective.

Application method

The tables on pages 5, 6, 7, 8 and 9 have been organised according to the application methods for the lice and fly products. They are intended to be used as a management tool when making decisions about which insecticide or application method to use in a given situation. 'Situation' includes length of wool growth and usual time of shearing, physiological state (e.g. non-pregnant, lactating), facilities and labour available. The 'situation' is usually a principal determinant of application method.

Calibrate and maintain application equipment

Some products must only be used with specified applicators e.g. handguns for pour-on lousicides.

All equipment used to apply chemicals to sheep should be maintained and calibrated carefully, to ensure they deliver the appropriate dose. Calibrate by measured volume, or pressure, or a combination as appropriate. Follow the instructions. Clean-up and storage are particularly important and the manufacturer's instructions for cleaning after using all chemicals should be followed carefully.

Comparing alternative treatments

Registered products containing the same concentration of the same active constituent (chemical) e.g. cyromazine 500 g/L, and registered for the same use, with the same instructions, can be considered as identical and therefore as direct alternatives. You should compare alternatives based on the treatment cost per head (\$/hd) after

allowing for, for example, appropriate body weight, wool growth and age.

Withholding periods – WHP

The Meat WHP is the minimum period of time which must elapse between the last treatment of an animal with a product and slaughter for human consumption in Australia.

Recently, the Australian Pesticides and Veterinary Medicines Authority (APVMA) which registers all these products has specified that the term WHP will no longer be used in relation to wool. Instead, two new terms are to be used: Wool Rehandling Period and Wool Harvesting Interval.

Wool Rehandling Period refers to the period between the sheep being treated and when the sheep or wool can be safely handled without the need for protective clothing. This rehandling period is important for the occupational health and safety of shearers and other workers that are handling sheep and/or wool.

Wool Harvesting Interval (WHI) refers to the period between treatment and when the wool is able to be harvested and satisfy Australian environmental requirements.

Export Slaughter Interval (ESI) is the minimum recommended time interval that should elapse between the last treatment with a product and slaughter for export.

Meat WHPs ESI and WHI (as at 6 February 2012) are given in the tables. If any animals are still within a WHP or ESI at the time of sale, the product used and date of application must be specified in Question 4 of the **National Vendor Declaration and Waybill (Sheep & Lambs)**.

Chemicals used and application dates must also be entered in Section 4 – Other Health Information on the **National Sheep Health Statement**.

Reducing chemical usage

The key to reducing reliance on chemicals is to use an integrated pest management (IPM) approach to control flystrike or eradicate lice. If you need to use chemicals, select those with the minimum risk and apply them strictly as directed to ensure their maximum effectiveness.

The four main IPM elements are:

- Management options: e.g. reduce susceptibility to breech strike by implementing correct tail length at lamb marking; match shearing/crutching time with periods of increased fly activity and reduce the risk of lice introduction.

- Genetic improvement: e.g. increase resistance to body strike and breech strike by selecting for resistance to fleece rot and for less wrinkle.
- Utilising the blowfly life cycle: e.g. using fly traps to monitor blowfly population and treating struck sheep to steady the increase in population.
- Selective and effective use of chemicals: e.g. only treat sheep for lice if they are lousy and apply chemical to **every** sheep correctly.

Availability of the products

Some products listed in the tables may not be available at your agricultural chemical supplier. This may be because:

- Your supplier does not stock that manufacturer's products.
- The manufacturer has recently or temporarily stopped supplying the product.
- The product may not be readily available in NSW, despite being registered for all States.

Further information

The list of registered veterinary chemicals changes every year. Users can check the current registration details for any chemical from the APVMA PUBCRIS database at www.apvma.gov.au, or <http://services.apvma.gov.au/PubcrisWebClient/welcome.do>

The FlyBoss internet page has information on management of flystrike including chemicals at <http://www.flyboss.org.au/tools/flystrike-decision-support-tools.php>

The LiceBoss internet page has information on management of lice including chemicals at http://www.wool.com/Grow_LiceBoss.htm

Other information on the NSW DPI website (www.dpi.nsw.gov.au):

Primefact 843 – *Hand jetting sheep*

Primefact 844 – *Spray-on flystrike prevention*

Primefact 845 – *Treating flystruck sheep*

Primefact 485 – *Sheep blowflies*

Primefact 848 – *Triggers leading to blowfly strike*

Primefact 918 – *Breeding merinos for less breech strike*

Primefact 483 – *Sheep lice*

Contacts for enquiries

- Your local NSW DPI Sheep & Wool Officer
- LHPA Veterinarians and Rangers
- Edward Joshua: (02) 6881 1275 or email edward.joshua@dpi.nsw.gov.au

Special note

Definitions

The labels of registered lice products usually refer to the product either 'controlling' or 'treating' lice. No label claims to 'eradicate' lice are made, however eradication is possible following the correct use of an immersion dipping system. 'Control' means to reduce lice in short wool sheep to non-detectable levels 20 weeks after treatment. 'Treat' means to reduce lice in long wool sheep 90 days after treatment by more than 95%.

Human health risks

Users who follow the directions for use will always have a lower risk of exposure to chemicals. This is because the use of the correct protective equipment and correct application technique will protect against significant exposure to chemicals.

The 'pure' or molecular form of many chemicals is highly hazardous to human health. However, because of dilution with 'carriers' which may assist with mixing and/or spread over the animal, the product you purchase may or may not be less hazardous. If further diluted with water for application, the chemical 'as applied' is likely to be less hazardous again.

There is some variation between chemicals within the broad groups e.g. OP, SP, IGR. In addition, some chemicals exhibit markedly different degrees of hazard between oral/inhaled and body (skin) contact. Refer to the product's Safety Data Sheet (SDS) for toxicological information. Your chemical reseller is required to provide the MSDS to you on request. For safety reasons treat all chemicals with respect and handle them according to the manufacturer's recommendations.

This Primefact contains the registered label claims for sheep ectoparasiticides. The list is comprehensive at the time of printing (September 2012). The tables are grouped according to the method of application. This information should be read in conjunction with the material referred to above so that recommendations from NSW DPI for the use of these registered chemicals can be followed.

Always read the label

Users of agricultural or veterinary chemical products must always read the label and any permit before using the product. Users must comply strictly with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

Labels specify appropriate application technique and recommend minimum standards for protective equipment to be used. You should request a Safety Data Sheet (SDS) when the chemical is purchased as this document gives further information on the chemical and what to do in cases of spillage or poisoning.

Workplace health and safety (WHS)

WHS regulations require that employees applying chemicals are appropriately trained and supervised in their use. The *Pesticides Act (1999)* also requires all users to be trained to use chemicals. Since July 2002 the same regulation has also required you to keep records of all pesticide applications. You will also need these records to complete National Vendor Declarations and Sheep Health Statements. Storage and handling recommendations on the label should be strictly adhered to for two reasons:

- to comply with WHS regulations
- to ensure that the shelf life of any remaining product is not compromised.

Acknowledgements

The authors gratefully acknowledge the work of previous authors Ian Evans & Clare Scanlan. Valuable suggestions were also made by Garry Levot, Principal Research Scientist, EMAI and Lee Cook, Veterinary Officer (Biological & Chemical Risk Management), Orange.

Off-shears backline treatments

Active	Trade Name	Manufacturer	Parasite	Withholding periods (days)			Label claim/recommendations
				Meat WHP	Wool Days	ESI	
Organophosphates (OP)							
Diazinon 93.3 g/L	Eureka Gold OP Spray-On	Coopers	Lice	21	60	21	For off-shears control of the sheep body louse
Synthetic Pyrethroids (SP)							
Cypermethrin 25 g/L	Outflank	Fort Dodge	Lice, ked	NIL	NS	14	For the control of sheep body lice & ked
Cypermethrin 25 g/L	Spurt	WSD	Lice	3	NS	14	For the control of body lice on off-shears sheep
Cypermethrin 25 g/L	Cypermethrin 25	4Farmers	Lice	3	NS	14	For control of body lice on off-shears sheep
Deltamethrin 10 g/L	Clout-S Backline	Coopers	Lice	3	NS	14	Controls body lice on sheep and lice on goats
Insect Growth Regulators (IGR)							
Triflumuron 25 g/L	Command Pour-On	WSD	Lice	14	NS	66	For control of body lice on shorn sheep up to 7 days off-shears & lambs at foot
Triflumuron 25 g/L	Exilice	Pharm Tech	Lice	14	60	NS	For the control of body lice on shorn sheep up to 7 days off-shears & unshorn lambs up to 3 months of age
Triflumuron 25 g/L	Exit	Ancare	Lice	14	NS	66	For the control of body lice on shorn sheep up to 7 days off-shears & unshorn lambs up to 3 months of age
Triflumuron 25 g/L	Triffik	Jurox	Lice	NIL	60	60	For control of body lice on shorn sheep up to 7 days off-shears and unshorn lambs up to 3 months of age
Triflumuron 25 g/L	Clipguard	Novartis	Lice	14	60	66	For the control of body lice on shorn sheep up to 7 days off-shears & unshorn lambs up to 3 months of age
Triflumuron 25 g/L	Triflumuron 25	4Farmers	Lice	14	NS	66	For the control of body lice on shorn sheep up to 7 days off-shears & lambs at foot
Triflumuron 25 g/L	Cannon	Procare	Lice	14	60	66	For the control of body lice on shorn sheep up to 7 days off-shears & unshorn lambs up to 3 months of age
Triflumuron 25 g/L	Zapp	Bayer	Lice	14	60	66	For the control of body lice on shorn sheep up to 7 days off-shears & unshorn lambs up to 3 months of age
Diflubenzuron 25 g/L	Magnum	Coopers	Lice	0 off shears 42 Long wool	180	0 42	For the control & treatment of body lice on sheep off-shears & unshorn lambs up to 3 months of age. Aids in the control of body lice infestations in long woolled sheep
Diflubenzuron 20 g/L	Stampede	Coopers	Lice	7	180	7	For the control & treatment of body lice on sheep up to 7 days off-shears & unshorn lambs up to 3 months of age. Aids in the control of body lice infestations in long woolled sheep
Dicyclanil 50 g/L	Clik Spray-On	Novartis	Fly	28	90	120	For the protection of sheep off-shears or with any length wool, against flystrike for 18-24 weeks. For the protection of marking wounds on sheep against flystrike.
Dicyclanil 50 g/L & diflubenzuron 15 g/L	Clik Plus	Novartis	Fly, lice	21	180	70	Protects against flystrike for 18-24 weeks. Controls & treats body lice on sheep treated off-shears or within 7 days of shearing & unshorn lambs up to 3 months of age.

Spinosyn (Spin)							
Spinosad 25 g/L	Extinosad Pour-On	Elanco	Lice	14	NIL	21	For the control of lice in sheep off-shears and with long wool.
Neonicotinoid							
Imidacloprid 35 g/L	Avenge Pour-On	Bayer	Lice	21	180	63	Pour-On Lousicide For Sheep. Controls susceptible body lice on shorn sheep off-shears.
Ivermectin Abamectin 6.0 g/l	Maverick Pour-On	Coopers	Lice	21	42	28	

Jetting Fluids

Active	Trade Name	Manufacturer	Parasites	Withholding periods			Label claim/recommendations
				Meat days	Wool days	ESI days	
Insect Growth Regulators (IGR)							
Cyromazine 500 g/L	Cyrazin Liquid	Ancare	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly.
Cyromazine 500 g/L	Cyromazine 500 SC	4Farmers	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Clout Blowfly Destroyer liquid	Coopers	fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Venus Liquid	Norbrook	Fly	7	60	21	Protects long wool sheep from flystrike for up to 14 weeks
Cyromazine 500 g/L	Virbazine Liquid	Virbac	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cy-Guard SC	WSD	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cyro-Fly 500	Jurox	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cyromazine Liquid	Youngs	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Exi-fly liquid	Bomac	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Lucify liquid	Norbrook	Fly	7	60	21	For the control of blowfly strike in long wool sheep for up to 14 weeks
Cyromazine 500 g/L	Proguard Liquid	Procare	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Vetrazin Liquid	Novartis	Fly	7	60	21	Protects long wool sheep from flystrike for up to 14 weeks
Diflubenzuron 250 g/L	Strike	Coopers	Lice	NIL	180	NIL	For the control & treatment of lice on sheep
Diflubenzuron 250 g/L	Fleececare	Virbac	Lice	NIL	180	NIL	For the control & treatment of lice on sheep
Macrocyclic Lactones (ML)							
Ivermectin 16 g/L	Paramax Multi-Purpose	Coopers	Fly & lice	7	42	7	Treatment of & protection against flystrike for up to 12 weeks under low to moderate fly pressure & treatment of biting lice in long wool. Oral treatment for control of internal nematode parasites, nasal bot & itchmite.
ivermectin 16 g/L	Zinjet	Agvantage	Fly & lice	7	42	7	Treatment of & protection against flystrike for up to 12 weeks under low to moderate fly pressure & treatment of biting lice in long wool
Ivermectin 16 g/L	Blowfly & Lice	Coopers	Fly & lice	7	42	7	Treatment of & protection against flystrike for up to 12 weeks under low to moderate fly pressure and treatment of biting lice in long wool

Spinosyn (Spin)							
Spinosad 25 g/L	Extinosad lice, fly and maggot eliminator	Elanco	Fly & lice	NIL	NIL	NIL	For the control of lice in sheep with short wool & long wool. For treatment & prevention of blowfly strike on sheep. For blowfly strike protection in mulesing & other wounds.

Hand dressings							
Active	Trade Name	Manufacturer	Parasites	Withholding periods			Label claim/recommendations
				Meat days	Wool days	ESI days	
Organophosphates (OP)							
Diazinon 200 g/L	Diazinon	Coopers	Fly	14	60	21	Used as a dressing for the control of blowfly strike on struck sheep, and as a dressing for marking wounds
Diazinon 200 g/L	Diazinon	WSD		14	30	21	For use as blowfly dressing for struck sheep & dressing for marking wounds on sheep
Diazinon 3 g/L + ODB 150 g/L + cresol 30 g/L	KFM Blowfly Dressing	Bomac	Fly	14	60	21	For treatment of sheep blowfly strike
Chlorfenvinphos 2.5 g/L & cresylic acid 25 g/L + oils + naphthalene	Defiance S	Fort Dodge	Fly	3	NS	14	Antiseptic & insecticidal dressing for treatment of blowfly strike on sheep, and for use at mulesing & marking. Helps protect wounds from blowfly strike
Diazinon 15 g/kg & PBO 0.8 g/L & pyrethrins 1 g/kg	Coopers Flystrike Powder	Coopers	Fly	14	NS	21	For control of flystrike (including poll strike on sheep) & as a general wound dressing on all animals.
Diazinon 15 g/kg & PBO 0.8 g/L & pyrethrins 1 g/kg	Flystrike Powder	WSD	Fly	14	Nil	21	To control flystrike & for wound dressing for animals
Diazinon 15 g/kg & PBO 0.8 g/L & pyrethrins 1 g/kg	Mulesing Powder	WSD	Fly	14	Nil	21	Wound dressing following mules operation; general wound dressing for sheep, cattle & goats
Paradichlorbenzene 400 g/L & propetamphos 14.4 g/L	Young's Deadmag	Arysta Lifescience	Fly	14	60	NS	For the treatment of blowfly struck sheep. Will protect against flystrike for up to 20 days
Insect Growth Regulators (IGR)							
Cyromazine 500 g/L	Venus Liquid	Norbrook	Fly	7	60	21	For the control of blowfly strike in long wool sheep for up to 14 weeks when used as directed
Cyromazine 500 g/L	Vetrazin Liquid ***	Novartis	Fly	7	60	21	Protects long wool sheep from flystrike for up to 14 weeks
Cyromazine 60 g/L	Vetrazin Spray-on ***	Novartis	Fly	7	60	28	Will protect long wool sheep against fly strike for 11 weeks
Cyromazine 500 g/L	Cyro-Fly 500	Jurox	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cyrazin Liquid	Ancare	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly.
Cyromazine 500 g/L	Clout Blowfly Destroyer	Coopers	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Macrocyclic Lactones (ML)							
Ivermectin 16g/L	Paramax Multi-purpose	Coopers	Fly	7	42	7	Treatment of & protection against flystrike for up to 12 weeks under low to moderate fly pressure & treatment of biting lice in long wool. Oral treatment for control of internal nematode parasites, nasal bot & itchmite.

Spinosyn (Spin)							
Spinosad 25g/L	Extinosad Aerosol for wounds	Elanco	Fly	NIL	NIL	NIL	For the treatment & prevention of blowfly strike in mulesing, marking & other wounds of sheep. Contains an antiseptic.

Longwool (backline) treatments							
Active	Trade Name	Manufacturer	Parasites	Withholding periods			Label claim/recommendations
				Meat days	Wool days	ESI days	
Synthetic Pyrethroids (SP)							
Alpha-cypermethrin 50 g/L	Vanquish	Coopers	Fly, lice	NIL	60	7	Spray on lice treatment and blowfly preventative for long woolled sheep & unshorn lambs
Insect Growth Regulators (IGR)							
Cyromazine 60 g/L	Clout Spray-On	Coopers	Fly	7	60	28	Will protect long wool sheep against fly strike for 11 weeks
Cyromazine 60 g/L	Venus Spray-on	Norbrook	Fly	7	60	14	Will protect long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Virbazine Spray-on	Virbac	Fly	7	60	14	Protects long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Vetrazin Spray-on	Novartis	Fly	7	60	14	Will protect long wool sheep against fly strike for 11 weeks
Cyromazine 60 g/L	Proguard Spray-on	Procare	Fly	7	60	NS	Will protect long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Cyro-Fly 60	Jurox	Fly	7	60	14	Will protect long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Lucifly Spray-on	Norbrook	Fly	7	60	14	Will protect long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Cyromazine Spray-on	Novartis	Fly	7	60	NS	Will protect long wool sheep against fly strike for 11 weeks
Cyromazine 60 g/L	Cyrazin Spray-on	Ancare	Fly	7	60	14	Will protect long wool sheep against fly strike for 11 weeks
Cyromazine 60 g/L	KFM Spray-on	Bomac	Fly	7	60	14	Will protect long wool sheep against flystrike for 11 weeks
Cyromazine 60 g/L	Cy-Guard Spray-on	WSD	Fly	7	60	14	Will protect long wool sheep against fly strike for 11 weeks
Dicyclanil 50 g/L	Clík Spray-On	Novartis	Fly	28	90	120	For the protection of sheep off-shears or with any length wool, against flystrike for 18-24 weeks. For the protection of marking wounds on sheep against flystrike.
Dicyclanil 12.5 g/L	Clíkzin Spray-On	Novartis	Fly	7	30	21	For the protection of sheep against flystrike for 11 weeks. For the protection of marking wounds on sheep against flystrike. Do not use on sheep off shears.
Diflubenzuron 25 g/L	Magnum	Coopers	Lice	42	180	42	For the control & treatment of body lice on sheep off-shears & unshorn lambs up to 3 months of age. Aids in the control of body lice infestations in long woolled sheep
Spinosyn (Spin)							
Spinosad 20g/L	Extinosad Pour On for Sheep	Elanco	Lice	NIL	NIL	NIL	For the control of lice in sheep off-shears and with long wool.

Wet Dipping

Active	Trade Name	Manufacturer	Parasites	Withholding periods			Label claim/recommendations
				Meat days	Wool days	ESI days	
Organophosphates (OP)							
Temephos 350g/L	Assassin	Coopers	Lice	14	180	42	For the control of body lice on wet or dry short wool sheep
Temephos 350g/L	Wham	Agvantage	Lice	14	180	42	For the control of sheep body lice on wet or dry short wool by plunge or shower dipping
Insect Growth Regulators (IGR)							
Diflubenzuron 250 g/L	Fleececare	Virbac	Lice	0	180	0	For the control & treatment of lice on sheep
Diflubenzuron 250 g/L	Crusader	Intervet	Lice	0	180	NS	For the control & treatment of lice on sheep
Diflubenzuron 250 g/L	Strike	Coopers	Lice	0	180	0	For the control & treatment of lice on sheep
Cyromazine 500 g/L	Vetrazin Liquid	Novartis	Fly	7	60	21	Protects long wool sheep from flystrike for up to 14 weeks
Cyromazine 500 g/L	Venus Liquid	Norbrook	Fly	7	60	21	For control of blowfly strike in long wool sheep for up to 14 weeks
Cyromazine 500 g/L	Virbazine Liquid	Virbac	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Proguard Liquid	Procare	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cy-guard SC	WSD	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cyrazin Liquid	Ancare	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly.
Cyromazine 500 g/L	Cyro-Fly 500	Jurox	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Clout blowfly destroyer	Coopers	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Cyromazine 500 SC	4Farmers	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Exi-Fly Liquid	Bomac	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Cyromazine 500 g/L	Lucifly liquid	Norbrook	Fly	7	60	21	For the control of blowfly strike in long wool sheep for up to 14 weeks
Cyromazine 500 g/L	Cyromazine Liquid	Youngs	Fly	7	60	21	Protects long wool sheep for up to 14 weeks from strike by blowfly
Spinosyn (Spin)							
Spinosad 25 g/L	Extinosad	Elanco	Fly, lice	0	0	0	For the control of lice in sheep with short wool & long wool. For treatment & prevention of blowfly strike on sheep. For blowfly strike protection in mulesing & other wounds.
Other compounds							
Magnesium fluorosilicate 400 g/kg + sulfur 50 g/kg + rotenone 13 g/kg	Flockmaster MKII	WSD	Lice, ked, itch mite	1	60	1	For the control of lice & ked & to aid in the control of itchmite in sheep off shears. Inhibits causative organism of mycotic dermatitis in dip wash.

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ISSN 1832-6668

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Published by the Department of Primary Industries, a part of the Department of Trade and Investment, Regional Infrastructure and Services.

PUB10/12[v2]