



NSW DEPARTMENT OF  
PRIMARY INDUSTRIES

# Chemicals registered to treat Lice and Flystrike on sheep, September 2004



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Chemicals used to combat the sheep body louse (*Bovicola ovis*) and the sheep blowfly (*Lucilia cuprina*) cost sheep producers more than \$30 million p.a. in NSW. Many of these chemicals are also registered to control the less significant ectoparasites ked (*Melophagus ovinus*) and itchmite (*Psorergates ovis*).

Chemical residues in wool are a threat to access for some markets e.g. European processors. Some chemical residues (e.g. diflubenzuron and triflumuron) are currently well above likely future limits. Tough new environmental laws in Europe may force processors to attempt to source raw wool with low, or no chemical residues. 'No-chemical' or 'low-chemical' residue wools may have a significant market advantage in the future.

Woolgrowers should 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

- Minimise chemical use to reduce cost of production.
- Reduce occupational health and safety risks.
- Gain access to particular wool markets by meeting customer needs
- Increase prices (potentially) by attracting more competition for 'clean' wool.

Table 1. Potential risks of use and exposure to insecticides

Group	Human health <sup>4</sup>	Pest resistance	Raw wool residues
OP	High	High for flies	Medium in LW <sup>1</sup>
SP	Medium	High for lice	High in LW <sup>1</sup>
IGR	Low	Dfb fly resistance <sup>2</sup>	High in LW <sup>1,3</sup>
Spin	Very low	None reported	Low
ML	Low	None reported	Low
Oth	Very low	None reported (not used for flies)	Low

Source: Evans, D; WA Agriculture Factsheet 1/2001

<sup>1</sup> LW – Long Wool is defined as more than six weeks after shearing.

<sup>2</sup> Fly resistance to diflubenzuron (Dfb) has been reported.

<sup>3</sup> Except CLIK<sup>®</sup>, this can be used up to 3 months before shearing and cyromazine products up to 2 months before shearing. Currently no EU limit set for cyromazine.

<sup>4</sup> See **Special Note: Human Health Risks**, page 8.

## CHEMICAL GROUPS

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

- organophosphates (OP): e.g. diazinon — Di-jet<sup>®</sup>, propetamphos — Ectomort<sup>®</sup>
- synthetic pyrethroids (SP): e.g. cypermethrin — Outflank<sup>®</sup>, deltamethrin — Clout-S<sup>®</sup>
- insect growth regulators (IGRs): triazines, e.g. cyromazine — Vetrazin<sup>®</sup>, dicyclanil — CLIK<sup>®</sup>; benzoylphenyl ureas, e.g. diflubenzuron — Magnum<sup>®</sup>, triflumuron — Zapp<sup>®</sup>
- macrocyclic lactones (ML) e.g. ivermectin — Paramax<sup>®</sup>
- spinosyns (Spin) e.g. spinosad — Extinosad<sup>®</sup>
- 'others', principally magnesium fluorosilicate + other compounds — Flockmaster II<sup>®</sup>

## 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.

## APPLICATION METHOD

This Agnote has been organised according to the application method for the lice and fly chemical. It is intended to be used as a management tool when making decisions about which product 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 it delivers the appropriate dose. Calibrate by measured volume, or pressure, or a combination as appropriate. Clean-up and storage are particularly important and the manufacturers 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. diazinon 200 g/L, and registered for the same use, with the same instructions, can be considered as identical, and as direct alternatives. You should compare alternatives based on the treated COST PER HEAD (\$/hd) after allowing for the appropriate bodyweight, wool growth, age, etc.

## WITHHOLDING PERIOD(S) – WHPS

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.

The **Wool WHP** is the amount of time required to elapse between treatments with insecticides and shearing under Australian law. Wool withholding periods are important for the occupational health and safety of shearers and all other workers that handle wool. Wool WHP

may soon be replaced or supplemented by the terms Wool Harvesting Interval (WHI) and Wool Re-handling Interval (Period).

The **Export Slaughter Interval (ESI)** is the minimum suggested time interval between the last treatment with a product and slaughter for export. Meat and Wool WHPs and ESIs (as at the time of printing) are given in the tables. You will need to state the chemicals used, dates of application, the withholding periods and ESIs on the **National Vendor Declaration (Sheep & Lambs)** if you sell treated animals. The chemicals used and dates of application should also be entered in Section 7 – Additional Animal Health Information – **NSW Animal Health Statement – Sheep**.

## REDUCING CHEMICAL USAGE

The key to reducing reliance on chemicals is to use an integrated pest management (IPM) approach to control or eradicate lice and flies. 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 and mules at lamb marking; and reduce risk of lice introduction.
- genetic improvement: e.g. increase resistance to body strike by selecting for fleece rot resistance.
- biological/environmental control: e.g. reduce fly populations by using fly traps, etc.
- selective and effective use of chemicals: e.g. only treat if lice are present and apply chemical to **every** sheep correctly.

## AVAILABILITY OF 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 brand.
- The manufacturer has recently or temporarily stopped supplying the product for registration or other reasons.
- The product may not be readily available in NSW, despite being registered for all states.

## Wet Dipping

Chemical - Active constituent(s)	Trade Name	Manufacturer	Parasites	Withholding periods			Label Claim/Recommendations
				Meat days	Wool days	ESI days	
<b>Organophosphates (OP)</b>							
Diazinon 200 g/L	Diazinon	WSD	Lice, fly, ked	14	60	21	DO NOT dip more than 6 weeks or less than 2 weeks after shearing.
	Cooper's Di-jet	Coopers Animal Health	Lice, fly, ked	14	NS	21	Dip 2-6 weeks off-shears.
Diazinon 500 g/L	Di-shield Sheep Dip & Jetting Fluid	Jurox	Lice, fly, ked	14	NS	21	Use in short wool only.
	Jetdip	Virbac	Lice, fly, ked, itchmite	14	60	21	Dipping within 2 weeks of shearing is not recommended. Do not dip sheep more than 6 weeks after shearing.
Diazinon 60g/L + piperonyl butoxide 7g/L + rotenone 15g/L	Diprite Constant Concentration Dipping	Captec	Lice, ked	21	7-27 WHI	21	Do not dip sheep more than 6 weeks after shearing. WHI is dependent on wool length & BWT at treatment.
	Coopers 4-in-1	Coopers Animal Health	Lice, fly, ked, itchmite	14	NS	21	Do not dip off shears. Wait at least 2 weeks to allow shearing cuts to heal. Do not dip sheep more than 6 weeks after shearing.
Propetamphos 360g/L	Jetdip 4-in-1	Virbac	Lice, fly, ked, itchmite	14	60	21	Avoid dipping of sheep with less than 2 weeks' wool.
	Ectomort & Lanolin Sheep Dip	Arvesta Corp.	Lice, fly, ked	14	60	21	Do not dip sheep more than 6 weeks after shearing. Dipping within 2 weeks of shearing is not recommended.
	Nufarm Seraphos 360	Captec	Lice, fly, ked	14	NS	21	Do not dip more than 6 weeks after shearing. Dipping within 2 weeks of shearing is not recommended.
<b>Insect Growth Regulators (IGR)</b>							
Cyromazine 500 g/L	Cyrazin Liquid	Ancare Australia	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowfly when applied by jetting or dipping. Do not use on sheep with less than 6 weeks wool.
	Cyro-Fly 500	Jurox	Fly	7	60	14	Do not use on sheep with less than 6 weeks wool. Protects long wool sheep from strike for up to 14 weeks.
	Cyromazine 500 SC	Farmoz	Fly	7	NS	14	For the control of blowfly strike in long wool sheep for up to 14 weeks.
	Venus Liquid	Farmoz	Fly	7	60	14	For the control of blowfly strike in long wool sheep for up to 14 weeks. Do not use on sheep with less than 6 weeks wool.
	Grow-Force Cyromazine Liquid	Joranimo	Fly	7	NS	14	Protects long wool sheep for up to 14 weeks from strike by blowfly. Do not use on sheep with less than 6 weeks wool.
	Jetrite Liquid	Captec	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowfly. Do not use on sheep with less than 6 weeks wool.
	Vetrazin Liquid	Novartis	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowfly. Do not use on sheep with less than 6 weeks wool.
	Virbazine Liquid	Virbac	Fly	7	60	14	Provides up to 14 weeks protection. Do not use in less than 6 weeks wool.
	Vital Crystal Cyromazine 500	Langey Holdings	Fly	NS	NS	NS	Protects long wool sheep from flystrike for up to 14 weeks. Do not use on sheep with less than 6 weeks wool.
	Fleececare	Intervet Australia	Lice, fly	Nil	180	Nil	Protects long wool sheep from strike by blowfly when applied by jetting or dipping. Not less than 6 weeks wool. Lice: 20 weeks protection; Fly 12 weeks protection.
Diflubenzuron 250 g/L	Crusader Insect Growth Regulator	Intervet Rural Co.	Lice	Nil	180	NS	Do not dip sheep more than 6 weeks after shearing.
	Duodip	Virbac	Lice, fly	Nil	180	Nil	Do not dip within 10 days off shears to allow shearing cuts to heal.
	Cooper's Strike	Coopers Animal Health	Lice, fly	Nil	180	Nil	Lice: 20 weeks protection; Fly 12 weeks protection. Can be used on short or long woolled sheep up to 6 months wool growth.
<b>Spinosyn (Spin)</b>							
Spinosad 25 g/L	Extinosad	Elanco	Lice, fly	Nil	Nil	Nil	An ESI may apply for short wool dipping; contact Elanco or MLA if sheep are destined for export.
<b>Other compounds</b>							
Magnesium fluorosilicate 405g/kg + sulfur 309g/kg + rotenone 15g/kg	Flockmaster	WSD	Lice, ked, itchmite	1	NS	1	DO NOT use later than 6 weeks off shears. Inhibits mycotic dermatitis organisms
	X-lice Washdown	Farmoz	Lice	1	NS	NS	Dip 2 - 6 weeks off-shears. Preferably around 10 - 14 days.
Magnesium fluorosilicate 400g/kg + sulfur 250g/kg + rotenone 13g/kg	Flockmaster Mk II	WSD	Lice, ked, itchmite	1	NS	1	DO NOT use later than 6 weeks off shears. Inhibits mycotic dermatitis organisms
	Splash	Virbac	Lice, ked, itchmite	1	NS	NS	Do not dip within 2 weeks off shears or more than 6 weeks after shearing

NS = Not Specified

## Offshears Backline Treatments

Chemical - Active constituent(s)	Trade Name	Manufacturer	Parasites	Withholding periods			Label Claim/Recommendations
				Meat days	Wool days	ESI days	
<b>Organophosphates (OP)</b>							
Diazinon 93.3 g/L	Eureka Gold OP Spray-On	Zagro Animal Health	Lice	21	60	21	For off-shears control of OP susceptible and SP resistant strains of the sheep body louse ( <i>Bovicola ovis</i> )
<b>Synthetic Pyrethroids (SP)</b>							
Cypermethrin 25 g/L	Cypercare	Virbac	Lice	3	NS	14	SP susceptible lice only. Do not apply later than 24 hrs after shearing.
	Cypermethrin 25	4Farmers	Lice	3	NS	14	Must be used within 24 hours of shearing
Cypermethrin 25 g/L + PBO 100 g/L	Outflank	Fort Dodge	Lice, Ked	Nil	NS	14	SP susceptible lice only. Apply within 24 hrs of shearing. Control is achieved in up to 6 weeks.
	Spurt	WSD	Lice	3	NS	14	Apply within 24 hrs of shearing.
Deltamethrin 10 g/L	Kleenklip	Virbac	Lice	Nil	NS	14	SP susceptible lice only. Must be within 24 hours of shearing
	Arrest	Intervet	Lice	7	NS	NS	Use within 24 hours of shearing. Do not treat ewes less than 6 weeks before lambing commences, as live lice can persist and infect the lambs. Do not treat lambing ewes or ewes with lambs at foot. Do not mix treated sheep with untreated sheep.
Coopers Clout-S	Coopers Animal Health	Coopers Animal Health	Lice	3	NS	14	SP susceptible lice only. Must only be used within 24 hours of shearing.

## Insect Growth Regulators (IGR)

Triflumuron 25 g/L	Zapp	Bayer	Lice	14	NS	66	For use up to 7 days off shears	
	Clipguard	Novartis	Lice	14	NS	66	All sheep up to 7 days off shears and unshorn lambs up to 2 months old	
	Command	WSD	Lice	14	NS	66	For use up to 7 days off shears	
	Epic	Jurox	Lice	14	NS	66	For use on shorn sheep up to 7 days off shears and lambs at foot	
	Exit	Ancare Australia	Lice	14	NS	66	Do not use on unshorn lambs more than 2 months old or adult sheep more than 7 days off shears.	
	Triflumuron 25	4Farmers	Lice	14	NS	66	For use up to 7 days off shears and lambs at foot	
	Grow Force IGR	Joranimo	Lice	14	NS	NS	For the control of body lice of shorn sheep up to 7 days off-shears and on unshorn lambs up to 2 months of age. DO NOT Mix treated sheep with lice free sheep until 4 weeks after treatment.	
	IGR	Virbac	Lice	14	NS	66	For the control of body lice ( <i>Bovicola ovis</i> ) on shorn sheep up to 7 days and on unshorn lambs up to 2 months of age. DO NOT Mix treated sheep with lice free sheep until 4 weeks after treatment. 20 weeks protection. Adult lice dead by 14 weeks	
	Diflubenzuron 20 g/L	Backlash	Intervet	Lice	21	NS	21	Control and treatment of lice ( <i>Bovicola ovis</i> ) on sheep
		Zenith	Intervet	Lice	21	NS	21	Apply within 24 hours of shearing. DO NOT treat ewes less than 6 weeks before lambing commences, as live lice can persist and infect the lambs.
Diflubenzuron 25 g/L	Magnum IGR	Coopers Animal Health	Lice, Fly	Nil	180	Nil	12 weeks protection. Apply within 24 hrs of shearing and/or unshorn lambs to 3 months of age.	
	Diflu offshears IGR	Coopers Animal Health	Lice	NS	NS	NS	For the control of body lice on sheep off-shears, including lice resistant to synthetic pyrethroids.	
Dicyclanil 50 g/L + Diflubenzuron 15 g/L	MAGik	Novartis	Fly, Lice	21	180	70	Treat off-shears or within 7 days of shearing. Protects against fly strike ( <i>Lucilia cuprina</i> ) for 18 - 24 weeks. Controls and treats body lice ( <i>Bovicola ovis</i> ). DO NOT treat ewes for lice less than 14 weeks before lambing commences. DO NOT treat lambing ewes or ewes with lambs at foot.	

NS = Not Specified

## Longwool (Backline) Treatments

Chemical - Active constituent(s)	Trade Name	Manufacturer	Parasites	Withholding periods			Label Claim/Recommendations
				Meat days	Wool days	ESI days	
<b>Synthetic Pyrethroids (SP)</b>							
Alpha-cypermethrin 50 g/L	Vanquish	Coopers Animal Health	Lice, fly	Nil	60	7	Prevention of strike for up to 10 weeks
<b>Insect Growth Regulators (IGR)</b>							
Cyromazine 60 g/L	Cyro-fly 60 Spray-On	Jurox	Fly	7	60	14	Will protect long wool sheep against fly strike for 11 weeks. Do not use on sheep with less than 6 weeks wool.
	Cyrazin Spray-On	Ancare Australia	Fly	7	60	14	Will protect long wool sheep against fly strike for 11 weeks. Do not use on sheep with less than 6 weeks wool.
	Venus Spray-On	Farmoz	Fly	7	60	14	Will protect long wool sheep against fly strike for up to 14 weeks. Do not use on sheep with less than 6 weeks wool.
	Sprayrite Spray-On	Merial Australia	Fly	7	NS	14	Will protect against fly strike for 11 weeks. Do not use on sheep with less than 6 weeks wool.
	Vetrazin Spray-On	Novartis	Fly	7	60	14	Provides 11 weeks protection. Do not use on sheep with less than 6 weeks wool.
	Virbazine Spray-On	Virbac (Australia)	Fly	7	60	14	Use with 6 weeks or more wool. Will protect long wool sheep against fly strike for 11 weeks.
	Young's Cyromazine Spray-On	Novartis	Fly	7	60	14	Will protect long wool sheep against flystrike for 11 weeks. DO NOT use on sheep with less than 6 weeks wool.
	CLIK Spray-On	Novartis	Fly	28	90	120	18 - 24 weeks protection against blowfly strike. Can be used 'off-shears' or with long wool. Also registered for application at Mulesing.
Dicyclanil 50 g/L			Fly				Lice & Fly: 12 weeks when applied to sheep 42 - 180 days O/S. May also be used O/S.
Diflubenzuron 25 g/L	Magnum IGR Pour-On	Coopers Animal Health	Fly, lice control	42	180	42	

NS = Not Specified

## Jetting Fluids

Chemical - Active constituent(s)	Trade Name	Manufacturer	Parasites	Withholding periods			Label Claim/Recommendations
				Meat days	Wool days	ESI days	
<b>Organophosphates (OP)</b>							
Diazinon 200 g/L	Diazinon	WSD	Fly	14	60	21	Hand jetting only.
	Di-shield	Jurox	Fly, lice, ked	14	NS	21	For the control of blowfly strike, lice and ked on short woolled sheep.
	Coopers Di-jet	Coopers Animal Health	Fly, lice, ked	14	NS	21	Hand jetting mainly.
Propetamphos 360 g/L	Jetlip	Virbac	Fly	14	60	21	Not recommended for use in Jetting races. Treats body lice on sheep with up to 10 months wool by hand jetting.
	Ectomort + Lanolin	Arvesta Corp.	Fly, lice, ked	14	60	21	Hand jetting only.
	Nufarm Seraphos 360	Captac	Fly	14	NS	21	Hand jetting & automatic jetting races. Saturate treated area to skin level.

## Insect Growth Regulators (IGR)

Cyromazine 500 g/L	Coopers Clout blowfly jetting/dipping liquid	Coopers Animal Health	Fly	3	NS	14	Protects long wool sheep for up to 14 weeks from strike by blowfly when applied by jetting or dipping. Do not use on sheep with less than 6 weeks wool.	
	Cyrazin Liquid	Ancare Australia	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowflies when applied by jetting or dipping. Do not use on sheep with less than 6 weeks wool.	
	Cyro-fly 500	Jurox	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowfly when applied by jetting or dipping. Do not use on sheep with less than 6 weeks wool.	
	Cyromazine 500 SC	Farnoz	Fly	7	NS	14	Protects long wool sheep for up to 14 weeks from strike by blowfly when applied by jetting or dipping.	
	Venus Liquid	Farnoz	Fly	7	60	14	For the control of Blowfly Strike in long wool sheep for up to 14 weeks.	
	Grow-Force Cyromazine	Joranimo	Fly	7	NS	14	Protects long wool sheep for up to 14 weeks from strike by blowfly. Do not use on sheep with less than 6 weeks wool.	
	Jetrite Liquid	Captac	Fly	7	60	14	Protects long wool sheep for up to 14 weeks from strike by blowfly. Do not use on sheep with less than 6 weeks wool.	
	Virbazine Liquid	Virbac	Fly	7	60	14	For use with at least 6 weeks wool growth	
	Vetrazin Liquid	Novartis	Fly	7	60	14	Provides up to 14 weeks protection.	
	Vital Crystal Cyromazine 500	Langey Holdings	Fly	7	NS	14	Protects long wool sheep for up to 14 weeks from strike by blowflies.	
	Diflubenzuron 250 g/L	Fleececare	Intervet Australia	Lice, fly	Nil	180	Nil	Effective SP resistant lice, OP resistant fly
		Cooper's Strike	Coopers Animal Health	Lice, fly	Nil	180	Nil	Effective SP resistant lice, OP resistant fly
	Duodip	Virbac	Lice, fly	Nil	180	Nil	Hand jetting only. Protects against strike for up to 12 weeks. For treatment of lice in long wool 43 days after shearing to 6 months before next shearing.	

## Macroyclic Lactones (ML)<sup>5</sup>

Ivermectin 75 mg/ml	Jetamec	Meriel	Lice, fly	7	NS	7	Treats & prevents blowfly strike on sheep. Control of biting lice on sheep.
Ivermectin 16 g/L	Cooper's Paramax Multi-Purpose Concentrate	Coopers Animal Health	Lice, fly	7	42 WHI	7	Kills maggots & protects against re-strike for up to 12 weeks. Can be used to hand jet long wool sheep – control – for lice.

## Spinosyn (Spin)

Spinosad 25 g/L	Extinosad	Elanco	Lice, fly	Nil	Nil	Nil	4 - 6 weeks protection; reduced period of protection in lambs and coarse wool sheep.
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NS = Not Specified

<sup>5</sup> A large number of ML based oral and injectable sheep drenches include a claim for Control of Itchmite in their registration

## Hand Dressings

Chemical - Active constituent(s)	Trade Name	Manufacturer	Parasites	Withholding periods			Label Claim/Recommendations
				Meat days	Wool days	ESI days	
<b>Organophosphates (OP)</b>							
Chlorfenvinphos 2.5 g/L + cresylic acid 25 g/L + oils + naphthalene	Defiance S	Fort Dodge	Fly	3	NS	14	Insecticidal flystrike, mules and wound dressing
Chlorfenvinphos 0.64 g/kg + dibutyl phthalate 20 g/kg	Aerosol Sheep Dressing	WSD	Fly	14	NS	14	To treat and prevent flystrike
Diazinon 3 g/L + ODB 150 g/L + Tar acids 30 g/L	Aerosol Sheep Dressing	David Gray & Co	Fly	14	60	NS	For use on short & long wool sheep
Diazinon 20 g/kg	KFM Blowfly Dressing	Captec	Fly	14	NS	14	Shear wool from the struck area, saturate the affected area. Apply to the wool surrounding mules wounds.
Diazinon 200 g/L	Mulesing & Flystrike Powder	Virbac	Fly	14	60	21	Clip wool around strike area and cover wound with powder. Dust marking & mulesing wounds with powder.
	Jetdip	Virbac	Fly	14	60	21	For the treatment of flystrike and as a dressing for marking wounds.
	Diazinon	WSD	Fly	14	Nil	21	Wool withholding does not apply for individual treatment.
	Coopers Di-jet	Coopers Animal Health	Fly	14	NS	21	Hand jetting mainly.
Diazinon 15 g/kg + PBO 0.8 g/kg + pyrethrins 1 g/kg	Coopers Fly Strike Powder	Coopers Animal Health	Fly	14	NS	21	For control of flystrike, including poll strike, and as a general wound dressing. Shear struck areas and dust liberally. Dust the marking wound area.
	Coopers Mulesing Powder	Coopers Animal Health	Fly	14	Nil	21	
	Fly Strike Powder	WSD	Fly	14	NS	21	Shear or clip the struck area and dust lightly. Apply liberally to wound area.
	Mulesing Powder	WSD	Fly	14	NS	21	
Diazinon 1g/L + PDB 50 g/L + phenol 44g/L + Euc.oil 202g/L	Kleen Dok	Virbac	Fly	14	NS	21	For use (on wounds) for protection against blowfly strike after mulesing or shearing.
Propetamphos 14.4g/L + PDB 4000 <sup>1</sup>	Young's Deadmag	Arvesta Corp.	Fly	14	60	NS	Clip wool from the struck area and 10cm around the affected area. Thoroughly saturate the strike AND the surrounding area. Do not allow maggots to escape into untreated area. Protection to 20 days against re-strike when applied as directed.
F + amphos 0.5g/L + cresol/s 5g/L + Euc.oil 150g/L	Nulfarm Mules 'N Mark II	Captec	Fly	14	NS	NS	Apply generously – app. 30 ml – evenly on the entire wound area and ensure saturation of the wool surrounding the wound, particularly the wool above the mules and marking wounds and where run-off blood is likely to collect.

## Insect Growth Regulators (IGR)

Cyromazine 500 g/L	Vetrazin Liquid	Novartis	Fly	7	60	14	Protects long wool sheep for up to 14 weeks. DO NOT use on sheep with less than 6 weeks wool.
	Cyrazin Liquid	Ancare	Fly	7	60	14	Clip the affected area and spray with a recommended Diazinon; then apply the product. The product is slow killing and larvae take 3 - 4 days to die.
	Cyro-fly 500	Jurox	Fly	7	60	14	
	Venus Liquid	Farmoz	Fly	7	60	14	
Dicyclanil 50 g/L	CLIK	Novartis	Fly	28	90	120	18 – 24 weeks protection against blowfly strike. Can be used 'off-shears' or with long wool. Also registered for application at Mulesing

## Macroyclic Lactones (ML)<sup>5</sup>

Ivermectin 75 mg/ml	Jetamec	Meril	Lice, fly	7	NS	7	Treats & prevents blowfly strike on sheep. Control of biting lice on sheep.
Ivermectin 16 g/L	Cooper's Paramax Multi - Purpose Concentrate	Coopers Animal Health	Fly	7	42 WHI	7	Kills maggots & protects against re-strike for up to 12 weeks.

## Spinosyn (Spin)

Spinosad 25 g/L	Extinosad	Elanco	Fly	Nil	Nil	Nil	Prepare fresh each day. Will protect mulesing and other wounds for a minimum of 8 days after treatment.
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# No specific label claims or recommendations available

NS = Not Specified

<sup>5</sup> A large number of ML based oral and injectable sheep drenches include a claim for Control of Itchmite in their registration

## Further information

The list of registered veterinary chemicals changes every year. Users can check the current registration details for any chemical at PUBCRIS [www.apvma.gov.au/pubcris/subpage\\_pubcris.shtml](http://www.apvma.gov.au/pubcris/subpage_pubcris.shtml)

Agnote DAI-70 *Sheep blowfly*

Agnote DAI-71 *Dressings for flystrike and wounds*

Agnote DAI-72 *Hand jetting sheep*

Agnote DAI-262 *Mulesing: accredited contractors*

Agfact A3.2.3 *Recommended mules and tail length*

Agfact A3.3.41 *Scoring sheep for fleece rot*

Agnote DAI-199 *Improving automatic jetting races*

Agnote DAI-192 *Life cycle of the sheep blowfly*

Agfact A3.9.31 *Sheep lice*

Agnote DAI-95 *How to have an effective lice eradication group*

Agnote DAI-85 *Plunge dipping equipment for sheep lice eradication*

## CONTACTS FOR ENQUIRIES

- NSW DPI Livestock Officer Sheep and Wool or Veterinary Officer, at your local NSW DPI office.
- Rural Lands Protection Board Veterinarians and Rangers.
- Ian Evans: 03 5881 9920 (W) 0427 102 287 (mob) [ian.evans@agric.nsw.gov.au](mailto:ian.evans@agric.nsw.gov.au)

## <sup>4</sup>SPECIAL NOTE:

### HUMAN HEALTH RISK

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

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 – OP, SP, IGR, etc. In addition some chemicals exhibit markedly different degrees of hazard between oral/ inhaled and body (skin) contact. Refer to the MSDS for the product for specific information. Specifically the Toxicity and Body contact Hazard Ratings. For safety's sake – treat **all** chemicals with respect and handle according to the manufacturers recommendations.

This Agnote contains the registered label claims for sheep ectoparasiticides. The list is comprehensive at the time of printing. 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 Department of Primary Industries for the use of these registered chemicals can be followed.

## DISCLAIMER

The information contained in this publication is based on knowledge and understanding at the time of writing (September 2004). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with their agricultural chemical supplier or manufacturer, the appropriate NSW Department of Primary Industries officer or the user's independent adviser. The product trade names in this publication are supplied on the understanding that no preference between equivalent products is intended and that the inclusion of a product name does not imply endorsement by NSW Agriculture over any equivalent product from another manufacturer. Recognising that some of the information in this document is provided by third parties, the State of NSW, the authors and the publisher take no responsibility for the accuracy, currency, reliability and correctness of any information included in the document provided by third parties.

## 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 be given a Material Safety Data Sheet (MSDS) when the chemical is purchased. The MSDS gives further information on the chemical and what to do in cases of spillage or poisoning.

## OCCUPATIONAL HEALTH AND SAFETY (OH&S)

OH&S regulations require that employees applying chemicals are appropriately trained and supervised in their use. The Pesticides Act (1999) also requires that by September 2005 **all** users be trained to use chemicals. The same Regulation has required since July 2002 that you keep a record of pesticide applications. You will also need these records to complete National Vendor Declarations and NSW Animal Health Statements. Storage and handling recommendations on the label should be adhered to strictly for two reasons:

- To comply with OH&S regulations.
- To ensure that the shelf life of any remaining product is not compromised.

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