



**NOW FROM Merial,  
A WOOL HARVESTING SYSTEM LIKE NO OTHER.**

**BIOCLIP<sup>®</sup> NATURAL WOOL HARVESTING SYSTEM**

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# INTRODUCING THE BIOCLIP® NATURAL WOOL HARVESTING SYSTEM

## Wool harvesting benefits

- More wool in your top line
- Longer and more consistent staple length
- Easier and safer
- Flexible and efficient

## Animal welfare benefits

- Avoids skin damage
- Reduces stress during harvest
- Minimises pizzle and teat damage
- Better grass seed control

## Wool quality benefits

- Higher quality wool to market
- Improves animal selection
- No second cuts
- No skin pieces

## Enabling young sheep to reach their full production potential



## What started as a dream over 30 years ago is now reality

Once upon a time sheep shed their fleeces naturally. But over time this characteristic has been largely bred out of most breeds, primarily to optimise fleece harvest.

In 1951 a biologically active protein was identified with the potential to stimulate sheep to shed their fleece. However it wasn't until the 1970s that the CSIRO began full scale research on this protein with a view to developing a viable alternative to manual shearing.

By the mid 1990s, technological development had delivered an injectable product that produced a complete break in the fleece. However it has taken many novel approaches and another decade of developmental work before a convenient, cost-effective method for retaining the detached fleece to be perfected.

Now the enormous potential of this idea has finally turned into a commercial reality. Because now from Merial comes the BIOCLIP® Natural Wool Harvesting System, a unique and revolutionary product available for use in the Australian Merino sheep industry as a viable alternative to manual shearing.



# A TOTALLY NEW WAY TO HARVEST WOOL

## What is BIOCLIP?

BIOCLIP is a natural wool harvesting system that consists of two basic components:

### 1. BIOCLIP injectable product containing protein which causes the wool to break.

This protein is a naturally occurring substance that is found in many tissues of mammals, for example in sheep saliva. It has been developed as an injectable product that is administered to the sheep by subcutaneous injection.



### 2. Fleece retention net.

This is a lightweight elastic net that does not require fastening and can be quickly and easily fitted to sheep. It comes in a range of sizes to suit different sheep sizes. The fleece can later be easily removed with the net.

Specifically designed BIOCLIP sheep handling cradles are also required for fitting the fleece retention nets. They come in a range of sizes to match individual net sizes.

The cradles can either be attached to a fence panel or used with a specially developed BIOCLIP handler.

Using the cradle attached to a fence panel is only suitable where small numbers of sheep can be manually lifted into it.



When large numbers of sheep are treated, the use of the specifically designed BIOCLIP handler is essential. This versatile handler facilitates smooth sheep flow, user safety and ease of administration. The handler can have different sized netting and harvesting cradles easily fitted.

## Fleece retention nets

The nets come in a range of sizes to suit the animal's body shape. Net sizes will vary depending on wool length, body condition, breed and bloodline. Nets can be used on wethers, ewes and lambs. Body weight provides the best guide to predicting appropriate net size.

Please refer to the following table that will serve as a guide to net selection.

Net Size	1	2	3	4
Target Sheep Age	2-4 months	3-5 months	5+ months	7-18 months
Length	750mm	840mm	950mm	1050mm
<b>Body Weight</b>	10-20kg	20-30kg	30-40kg	40-50kg
Fleece Retention Net	Yellow	Green	Blue	Black
Without Legs	✓	✓	✓	✗
With Legs	✗	✓	✓	✓

BIOCLIP fleece retention nets are currently only available for lambs and hoggets up to approximately 50kg liveweight. Therefore, BIOCLIP is not suitable for all sheep classes or for use in all sheep/wool producing areas, and will not make traditional mechanical shearing redundant in most enterprises. However, its potential to revolutionise harvesting options with significant production and management advantages it presents, especially in young sheep, make it applicable in the majority of sheep enterprises.

## The science of the BIOCLIP protein

BIOCLIP's biologically active protein is named epidermal growth factor (EGF) and is found naturally in many animals, including sheep.

After the BIOCLIP injectable formulation is injected subcutaneously into the sheep, the EGF is retained in the sheep's system at effective levels for approximately 16 hours. This elevated level of EGF causes a 'natural' break in the wool fibre just below the skin surface, allowing the fleece to be harvested after four weeks. The EGF protein is metabolised and deactivated within 48 hours of administration at which time normal wool growth recommences.

One of the features of EGF is that hair fibres (medullated fibres) are not affected and consequently are not removed by the BIOCLIP harvesting process.

There are no known long-term effects on wool production from the use of BIOCLIP.

# HOW THE BIOCLIP SYSTEM WORKS

1. The sheep are injected with BIOCLIP.
2. The retention net is then fitted on to the sheep. This retention net has two functions:
  - a. to capture and hold the wool in place for harvesting.
  - b. to ensure the sheep has adequate protection from sunburn and cold exposure while the wool regrows.
3. The net is left on the sheep for at least four weeks in the paddock.
4. The sheep are then brought back in and the fleece is removed in the net. After removal the fleece is held together by the net in one piece.
5. Wool can be separated and prepared immediately or, depending on practicality, stored for clip preparation at a later time. This flexibility allows more time to be spent on each fleece, ensuring superior quality of preparation.



## **BIOCLIP gives you more control**

The efficiency and effectiveness of the BIOCLIP system results in improved wool quality, better classing of the wool and better labour productivity. All of which enables you to maintain more control over the quality of the wool harvesting process.

## **Which sheep are suitable for a BIOCLIP wool harvest?**

BIOCLIP is for wool harvesting in Merino sheep and can be effectively used to harvest wool of any length in sheep ranging in size from 10 to 50 kg. Only Merino sheep (full or half-bred) are suitable for harvesting of wool with the BIOCLIP Natural Wool Harvesting System. This is because Merino sheep have year-round wool growth whereas non-Merino sheep may have periods when wool growth stops and BIOCLIP Injection may not be effective. In practice it has been found that BIOCLIP works reliably with sheep that are half-bred (crossbred), that is, those that have a full Merino as one parent.

By incorporating strategic use of BIOCLIP into the normal management practice of young sheep (lambs and hoggets) you can achieve the greatest potential benefits. Optimised wool quality and profitability, superior replacement selection and conservation of breeding fitness are key advantages in treating this class of animal.

The accompanying table shows the range of potential benefits BIOCLIP brings to each class of young sheep compared to conventional shearing.

**Guide to timing and benefits of the BIOCLIP Natural Wool Harvesting System**

**Shearing objectives for different classes of Merino Sheep**

**Young Lambs**

- Bring lambs in line with the main flock’s annual shearing.
- Removal of lamb’s tip in order to set the lambs up to produce a quality fleece.
- Reduce the risks of flystrike.
- Remove or prevent grass seed fleece contamination.
- Improve growth rates.

2-4 MONTHS

**Older Lambs**

- As above but also to:
- Enhance wool quality through animal husbandry.
  - To harvest potentially very valuable wool (40-70 mm wool length)
  - Improve sheep presentation.

4-8 MONTHS

**Hoggets**

Harvest potentially the most valuable wool in the enterprise (75-90mm wool length).

8-14 MONTHS

**BIOCLIP benefits compared to conventional shearing**

- **Flexibility** to manage fleece harvest independent of shearer availability.
- Ideal for lamb wool harvest.
- BIOCLIP **minimises husbandry hazards** that are associated with traditional shearing. These include:
  - avoiding skin cuts (that set sheep back and potentially predispose disease transfer and risk flystrike), and;
  - minimising potential pizzle, teat and hamstring injuries.
 This **conserves production potential** of young sheep.
- Strategic timing can minimise detrimental effects of grass seed.
- Lamb wool tip can be **uniformly removed** at desired age, setting up the potential for a premium value hogget fleece.
- **Increased clip value** through **longer staple, greater staple uniformity** (no second cuts) and **absence of skin pieces**.
- Fleece preparation is not constrained by harvest speed.
- Individual fleeces can be stacked and if preferred, classed later independently of wool harvest.
- Each fleece removed in its net can be stored as a separately identifiable item. Very convenient to label with sheep identification.
- Improved **ability to identify traits** such as wrinkle, coarse hair fibre, and fleece characteristics after harvest. Aids objective **sheep classing**, improving **selection, discard** of culls at an early age.
- **Presentation benefits** of treated sheep can be important for sale or stud sheep.
- **Flexibility** to choose fleece harvest date to achieve optimal staple length.
- **Optimising clip quality** through
  - more staple length.
  - more uniform staple length.
  - elimination of lock lines and skin pieces.
 This means **more wool in the top line**.

**Prime Lambs\* 4-7 months**  
 To improve live weight growth through shearing. Reduce the chance and effects of flystrike and grass seeds infestation.

**Avoid stress** and skin cuts associated with conventional shearing. The absence of skin cuts **improves hide quality** and value. Improved **animal presentation**. Strategic use can **minimise detrimental effects of grass seed**.

\*For reliable wool harvesting, cross bred sheep must have at least one parent 100% Merino.

# THE BIOCLIP SYSTEM IN PRACTICE

## Who can use BIOCLIP?

BIOCLIP is a restricted sale item. It is only available from accredited BIOCLIP resellers. It can only be purchased and administered by accredited 'users' or 'contractors'. Sheep producers have the choice of becoming an accredited BIOCLIP user or employing the services of an accredited BIOCLIP contractor. Purchases are made by presenting an accreditation card and signing a BIOCLIP Sales Log at the time of purchase.

## ACCREDITED RESELLER

**BIOCLIP® NATURAL WOOL HARVESTING SYSTEM**  
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**BIOCLIP® WOOL HARVESTING SYSTEM**   
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CONTRACTOR  
ACCREDITATION CARD

Contractor  
name:

Accreditation  
number:

Expires  
end:

**BIOCLIP® WOOL HARVESTING SYSTEM**   
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USER  
ACCREDITATION CARD

User  
name:

Accreditation  
number:

Expires  
end:

## Treatment programme outline

- Day 1** Sheep are treated in a BIOCLIP cradle. It can be attached to a fence panel or a specially designed BIOCLIP handler. Sheep are injected with the BIOCLIP injectable product and the appropriate fleece retention net is then fitted.
- Day 2-7** Sheep are observed daily while they get accustomed to fitted nets.
- Day 12** All sheep will have fleece detaching from skin by this time.
- From Day 28** Sheep are brought back in for wool harvesting. It is important to confirm that there is adequate regrowth of wool, to protect the sheep against sunburn and exposure prior to the removal of fleece retention nets. Fleece retention nets can be removed from sheep either via the BIOCLIP handler or across the board. Sheep are returned to the paddock. (If there is inclement weather sheep will need to be adequately sheltered and/or shedded after harvest as they would following conventional shearing.)

# BIOCLIP – GOOD FOR THE SHEEP, THE WOOL AND THE SHEEP PRODUCER

BIOCLIP will provide Australian wool producers with significant potential to achieve both on-farm benefits and down-stream wool processing benefits to the sheep industry as a whole.

## WOOL HARVESTING BENEFITS

### More wool in your top line

The beauty of BIOCLIP is that there are no second cuts or skin pieces. This results in more even and longer length of wool. Fleece quality and wool presentation is therefore superior, which means you can look forward to a greater percentage of wool in the higher value lines.



### Easier and safer

Occupational stress and injury hazards are dramatically reduced with BIOCLIP. The BIOCLIP handler makes the job of harvesting wool a lot less strain, as with the proper set up there's less need for dragging and back bending, as the sheep come to the operator via the BIOCLIP handler.



### Flexible and efficient

The BIOCLIP system will greatly increase the flexibility of wool harvest timing in young sheep. It allows the choice of classing the clip during or after harvest. Treatment and netting can be done in either the paddock or yards. There are no power requirements, and skilled shearers are not needed for the harvesting process.

## ANIMAL WELFARE BENEFITS

### Improved health

Skin damage risk is greatly reduced with BIOCLIP. Cuts from conventional shearing can increase threat of flystrike and spread of post-shearing diseases such as cheesy gland. The improved hide quality and superior presentation of the sheep also results in reduced time from harvest to livestock sales.

### **Reduced stress during harvest**

The BIOCLIP wool harvesting procedure reduces stress on animals through decreased handling time and less physical trauma compared to traditional shearing. Productivity loss, especially in young sheep, is minimised as sheep will recommence grazing straight after harvest.

### **Minimises pizzle and teat damage**

BIOCLIP minimises potential losses due to pizzle, teat and hamstring injuries. Teat and udder damage in ewes can cause reduced milk production, lamb deaths and slower growth in surviving lambs. But with BIOCLIP, this will no longer be an issue.



### **Better grass seed control**

Flexibility of BIOCLIP allows wool harvest in young sheep to be strategically timed prior to the onset of grass seed set. This can lessen potential skin damage and clip contamination from grass seeds, with a resulting improvement in hide quality and overall health.

## **WOOL QUALITY BENEFITS**



### **Higher quality wool to market**

One of the great features of BIOCLIP is that you can improve the quality of your wool. There are no skin pieces, no mechanical damage to the fibre, and no coarse hair fibres contaminating the fleece. Removal of fleeces contaminated with dermatitis leaves a cleaner skin surface for the following season. No second cuts means no lock line. As fleeces can be stacked in the nets, more time can be spent after harvest preparing the clip.

### **Improves animal selection**

Following wool harvest with BIOCLIP undesirable coarse hair fibres remain on the sheep, which allows for more objective classing and culling. Skin wrinkle is also clearly visualised, allowing for accurate selection of desired traits.



## DIRECTIONS FOR USE

If you plan using BIOCLIP for your sheep, you have two options: (1) retain the professional services of an Accredited Contractor, or (2) attend and complete a BIOCLIP Training and Accreditation Course that allows you to implement the BIOCLIP process on your own sheep.

More information is available from your Merial Territory Manager or call Merial Customer Solutions Australia on 1800 808 691.

This product must only be administered by trained and accredited BIOCLIP users or contractors.

These people are issued valid, personalised BIOCLIP Accreditation Cards. Users have a green accredited user card and contractors have a gold accredited contractor card.

### Always read the product label for recommendations

- Do not use in pregnant or lactating ewes.
- Do not use in ewes within 28 days prior to joining.
- Do not use in rams within 70 days prior to joining.
- Do not INJECT animals other than Merino sheep (full Merino or half-bred Merino sheep).
- Do not use in nutritionally compromised sheep.

### Pack size

500mL BIOCLIP injectable (plus 250 nets)

### Dose rate

The following dose rates apply only to **sheep under 50Kg body weight**.

(1) For sheep under 7 months of age: Two injections each of 1mL administered 5 to 14 hours apart.

(2) For sheep over 7 months of age, up to 50kg liveweight: Single dose of 2mL.

### Storage

Store at 2°C to 8°C (Refrigerate. Do not freeze) Protect from light.

The use of an insulated container is recommended during the day to protect BIOCLIP.

### Safety

Always wear strong leather gloves while injecting sheep.



### Withholding period

Do not administer later than 7 days before slaughter for human consumption.

### How can you take advantage of BIOCLIP?

For more information on BIOCLIP please contact your Merial Territory Manager or call Merial Customer Solutions Australia on 1800 808 691, or visit [bioclip.merial.com.au](http://bioclip.merial.com.au).



**BIOCLIP**<sup>®</sup>  
NATURALLY HARVESTED WOOL



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