

## Unit 19: Systemic treatments Factsheet

### Introduction

This session will deal with the systemic application of ectoparasicides to farm animals.

### Ectoparasicides

An ectoparasicide kills ectoparasites (these are living organisms that live on the outside of an animal.)

These can be divided into groups based on chemical structure, and their way of working (mode of action).

### How do ectoparasicides work?

Ectoparasicide work either:

- i) **Systemically** - carried in the bloodstream or
- ii) **Topically** - direct contact with the target organisms.

#### i) Systemic treatments

These may be given by:

- Injection - enters the blood stream
- Applied topically to the skin e.g. pour on, spot on, spray on or dipping. The chemical compound is absorbed through the skin and is taken up into the blood.

### Methods of application

Split into two categories:

- i) Injectables
- ii) Topicals

#### 1. Injectables

These chemicals are injected subcutaneously into the animals. They travel to the blood stream

- Usual chemicals: ivermectins, doramectins, moxidectins.
- Injection site usually behind the shoulder
- Dosage rate depends on body weight

#### 2. Topical systemic application

There are three main methods of ectoparasicide application:

1. Pour on/spot on
2. Spray on
3. Dipping

There are two alternative methods:

- Showering
- Jetters

### 1. Pour on/spot on

- Usually applied over a larger surface area
- Pour on in a line down the back
- Spot on in one place usually behind neck
- Variety of chemicals used depends on product e.g. coopers spot on contains Deltamethrin, merials' ivomec pour on contains ivermectin
- The dosage rate depends on the weight of the animal
- Applied via special 'Squeeze 'n' Pour' dispenser or applicator gun
- In shorn sheep the wool needs to be parted to expose the skin.

### 2. Spray ons

- Applied to fleeced or shorn ewes
- Sprayed onto larges areas e.g. back line breech and rump
- Special applicator gun
- Dosage rate depends on animal's weight
- Variety of chemicals used depending on product e.g. vetrazine, crovect, klik
- Prevents blowfly strike on areas covered by spray
- Dye in the solution which indicates the areas covered.

### 3. Plunge dipping

Plunge dipping is the oldest and most trusted prevention method. The sheep is completely immersed in a chemical. Dips contain different chemicals.

The two main groups are:

- the organophosphorus group - more harmful to humans
- the synthetic pyrethroids - more harmful to the environment

Both groups kill the ectoparasite, deter their presence or prevent their development.

### Alternative methods of controlling ectoparasites systemically

- a) Sheep showering
- b) Jetting

### Sheep showering and jettors

- Sheep are showered with dip chemical
- High pressure pump and special hand piece sprays dip onto the sheep
- Can be used effectively to control flystrike
- Not effective to control scab

- Sheep must be showered/jetted for long enough so that the chemical reaches skin level.