THE VIRBAC SOLUTION

... for comprehensive ectoparasite control

Shaping the future of animal health

Virbac

Ticks are the most economically important external parasite of livestock

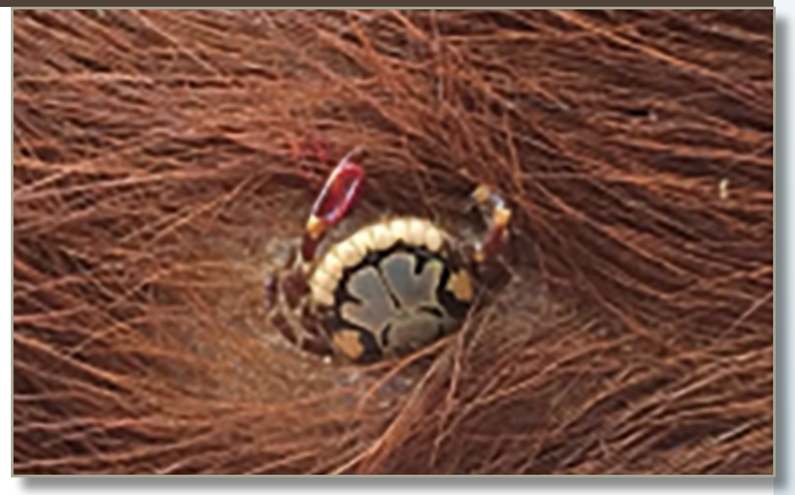
Heavy tick infestations lead to:

- **Production losses**
- **Mechanical damage**
- **Transmission of diseases**

ECONOMIC IMPACT OF PARASITES

ECONOMIC IMPACT
OF TICKS

MECHANICAL DAMAGE



Tick bite wounds cause:

Skin damage which leads to:

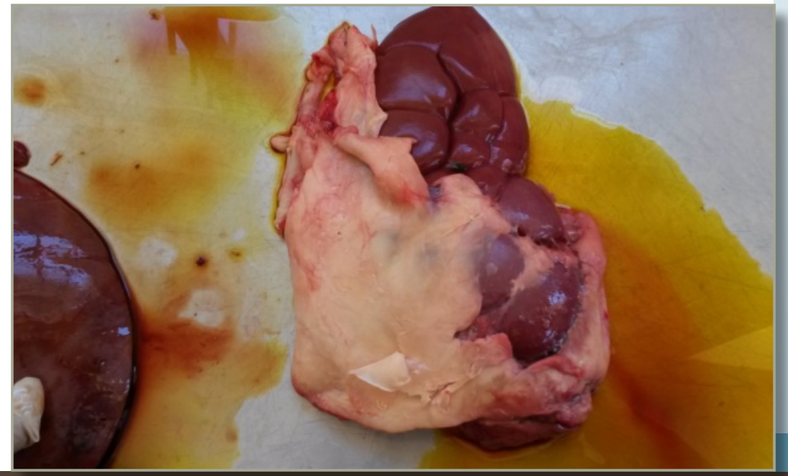
- **Downgrade quality of hides**
- **Damage to reproductive organs**
- **Loss / damage to ears**

Wounds & abscesses which may lead to:

- **Secondary infections**
- **Blowfly strike / miasis**

ECONOMIC IMPACT
OF TICKS

TRANSMISSION OF DISEASE



Most important and well known tick-borne diseases causing stock losses

- **Anaplasmosis**
- **Redwater**
- **Heartwater**
- **Tick toxicosis**
- **Lumpy skin disease**
  (new research)

ECONOMIC IMPACT
OF TICKS

PRODUCTION LOSSES

22 engorging Bont ticks on cow per day over a 90 day period leads to

Heavy tick infestations also effects production:

- **Loss of condition**
- **Decreased weight gain**
  - A heavy Bont tick infestation reduce weight gain by a loss of 10 g per engorging female tick on cattle and has shown to reduce milk yield, to the extend that a loss of 6 g live weight gain was recorded in calves per engorged tick on the dams
- **Reduction in milk yield**

TICKS AND TICK CONTROL

Efficient control of ticks enables profitable stock farming

Important factors to consider for **a complete tick control strategy**:

- **Different tick species**
- **Seasonal occurrences of the different tick species**
- **Tick control regimes**
- **Products**

There are 2 different one-host ticks:

THE BLUE TICK

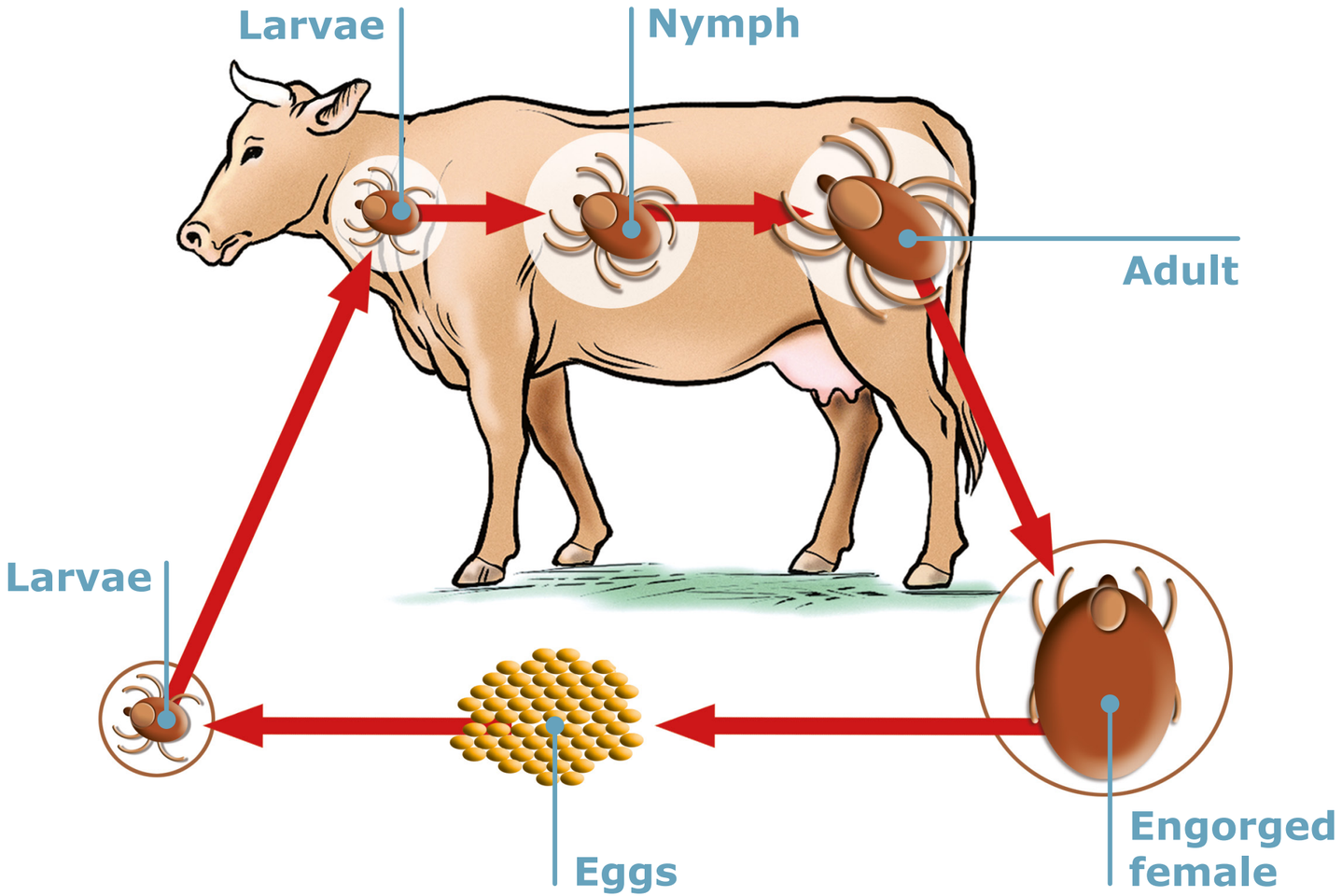
Rhipicephalus (Boophilus) decoloratus

THE ASIATIC BLUE TICK

Rhipicephalus (Boophilus) microplus

ONE-HOST TICKS

ONE-HOST TICKS
LIFECYCLE



ALL THREE STAGES
ON THE SAME HOST

Lifecycle lasts 2 months

- For eggs to hatch: ± 3 – 6 weeks
- Larvae to adult: ± 21 days

Female lays 2 500 – 3 000 eggs

3 – 4 generational cycles can be completed in 12 months

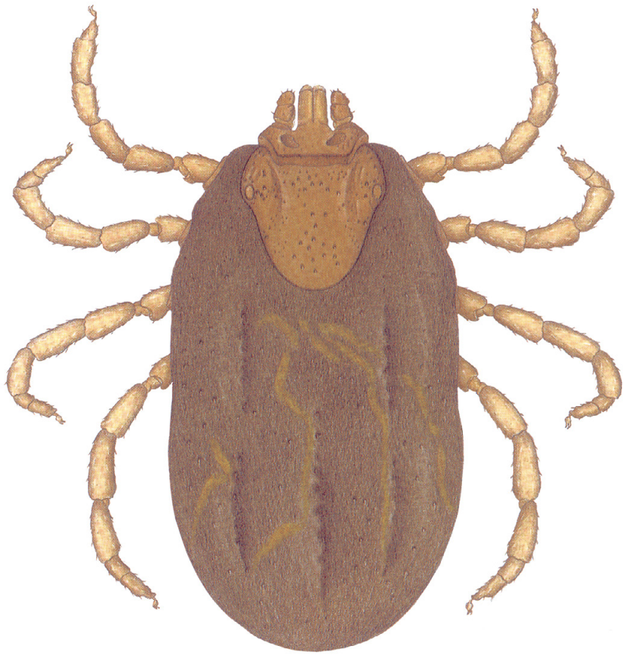
SURVIVAL PERIOD WITHOUT A HOST

LARVAE: 8 MONTHS

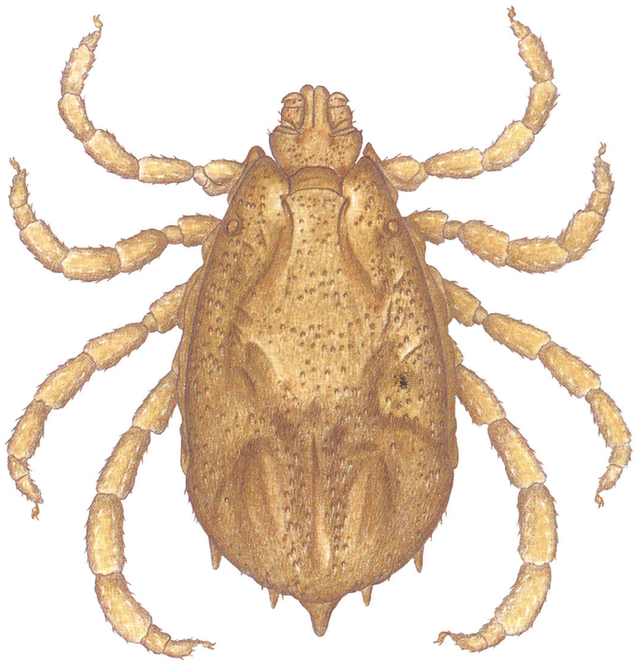
Adapted from Ticks and tick-borne diseases[1]

BLUE TICK & ASIATIC BLUE TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE



ADULT MALE

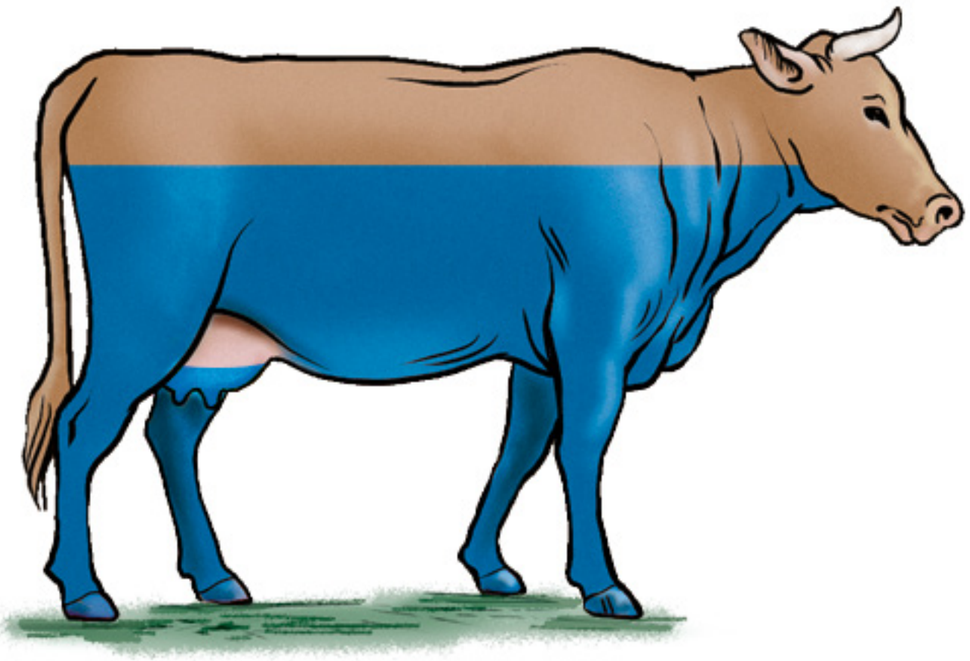


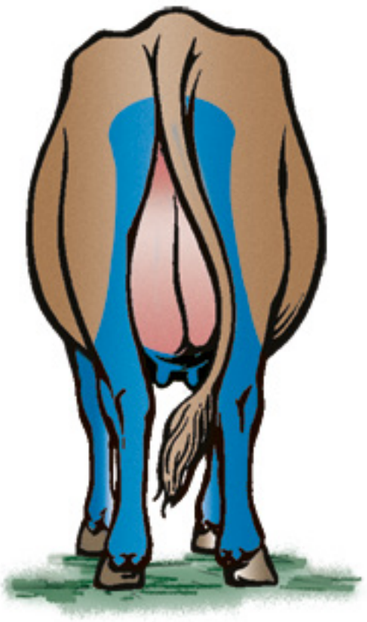
DISEASES

- **Redwater**
- **Gallsickness**
- **Spirocheatosis**

Adapted from Ticks and tick-borne diseases[1]

BLUE TICK & ASIATIC BLUE TICK
ATTACHMENT SITES

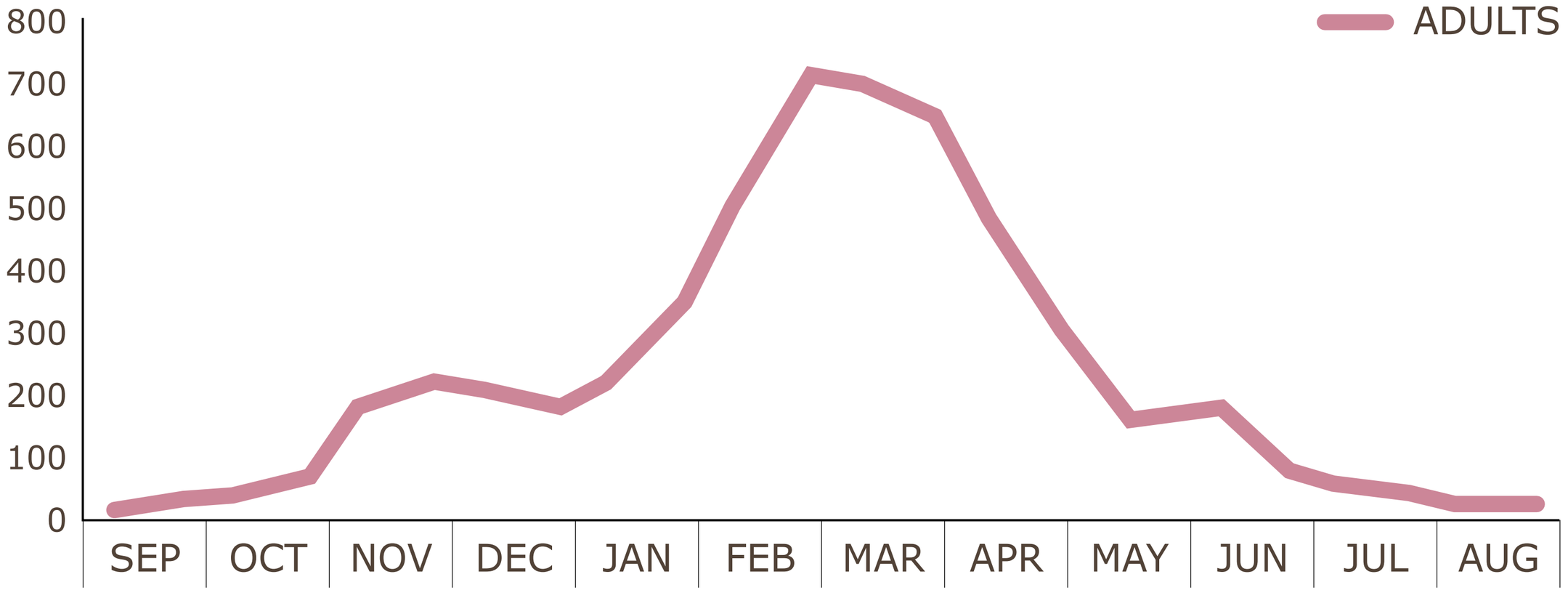




- **Neck**
- **Dewlap**
- **Lower body**
- **Escutcheon** (udder area)
- **Back of head** (poll)
- **Legs**

Adapted from Ticks and tick-borne diseases[1]

ONE-HOST TICKS
SEASONAL OCCURRENCE



Adapted from Ticks and tick-borne diseases[1]

VIRBAC SOLUTION FOR
ONE-HOST TICK CONTROL

1

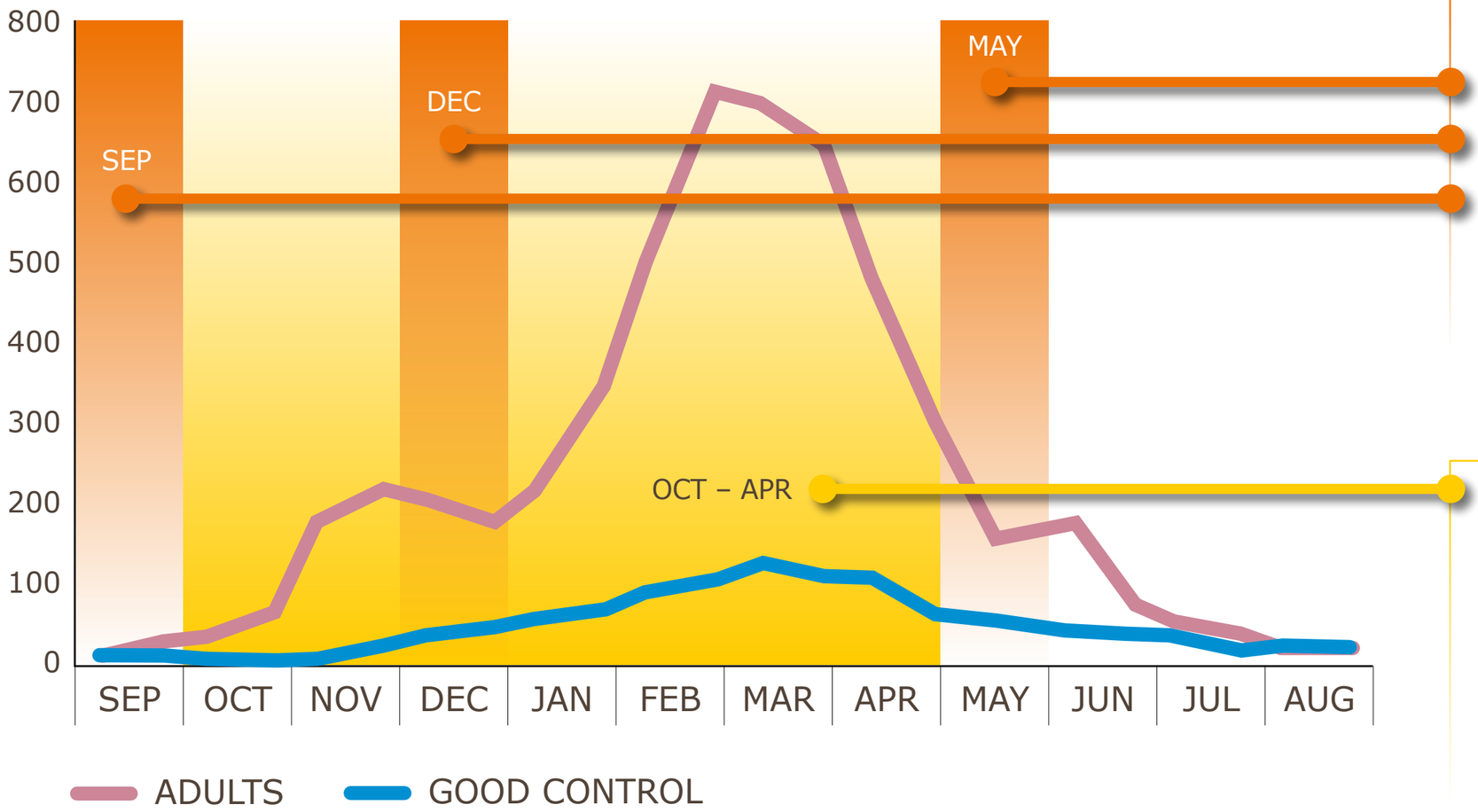
VIRBAMEC® LA
ELIMINATE
AMIPOR®
MULTIDIP

- Treat animals in **early spring** to reduce larvae and nymphs
- Follow up with a contact dip when endectocides are used

With high tick challenges or when animals are moved to rested camps:

- Dip animals 1 x per week, for 3 weeks/
  Dip according to the 5, 5, 4 day dip strategy
- Always use contact dips:
  - AMIPOR®
  - MULTIDIP

VIRBAC TREATMENT STRATEGY FOR **ONE-HOST TICK CONTROL**



VIRBAMEC® L
VIRBAMEC® LA
ELIMINATE

AMIPOR®
MULTIDIP

TWO-HOST TICKS

There are 2 different two-host ticks:

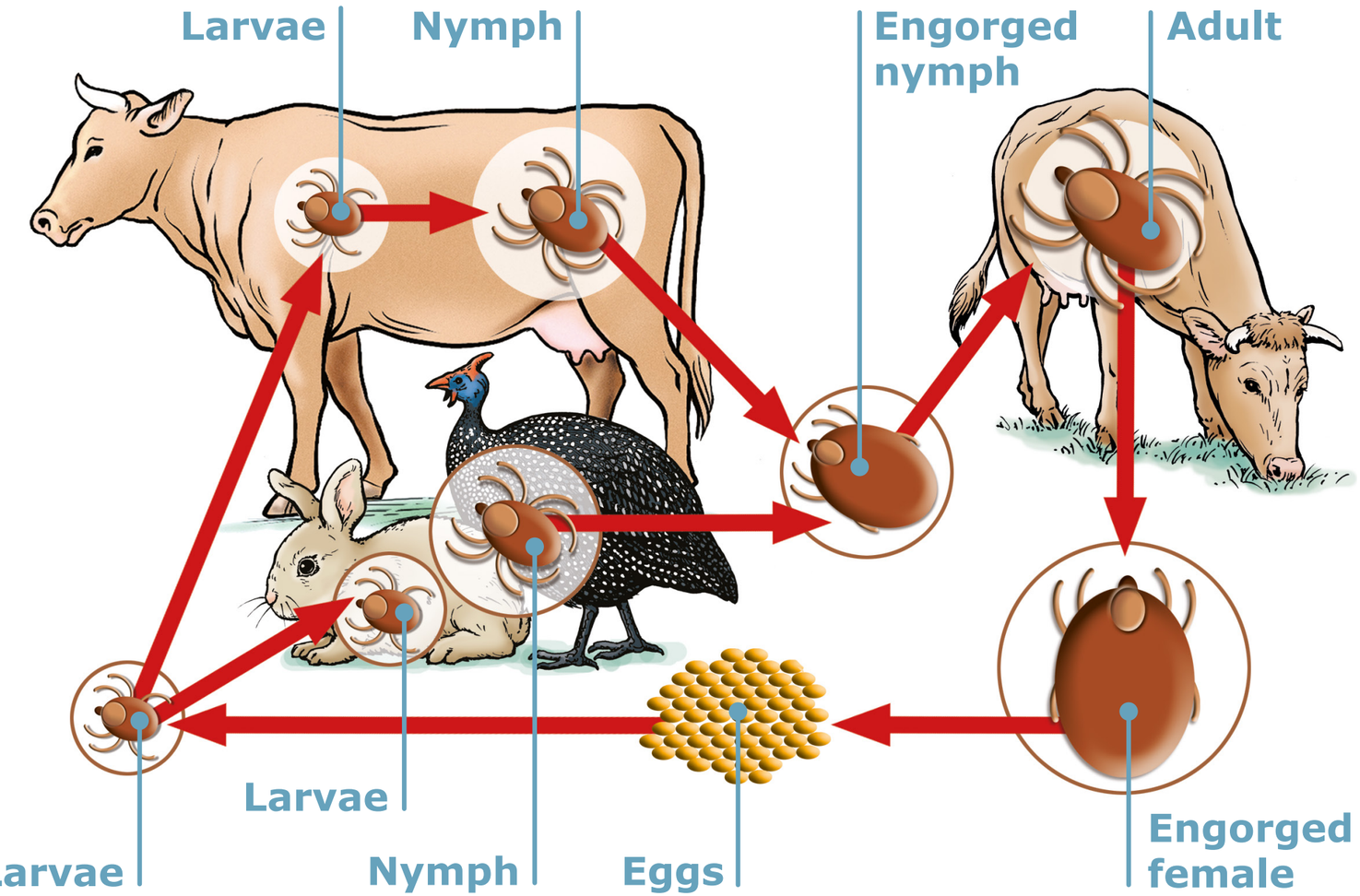
BONT-LEGGED TICK

***Hyalomma* spp.**

RED-LEGGED TICK

Rhipicephalus evertsi evertsi

TWO-HOST TICKS
LIFECYCLE



THESE TICKS NEED 2 ANIMALS TO COMPLETE THEIR LIFE CYCLE

- Larvae and nymph stages on the same host
- Adult stage on a different host

BONT-LEGGED TICK

- **Lifecycle takes ± 1 year to complete**
- **Female lays 10 000 – 15 000 eggs**

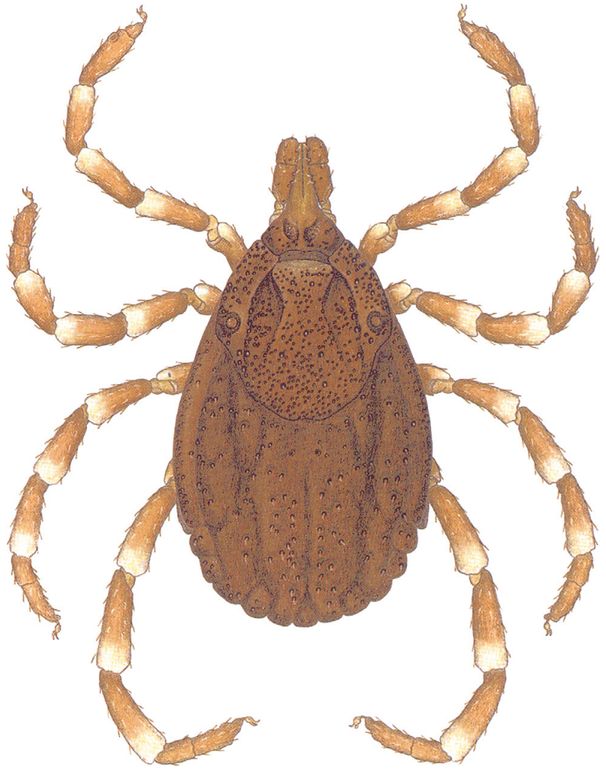
RED-LEGGED TICK

- **Lifecycle takes ± 4 months to complete**
- **Female lays 7 000 eggs**

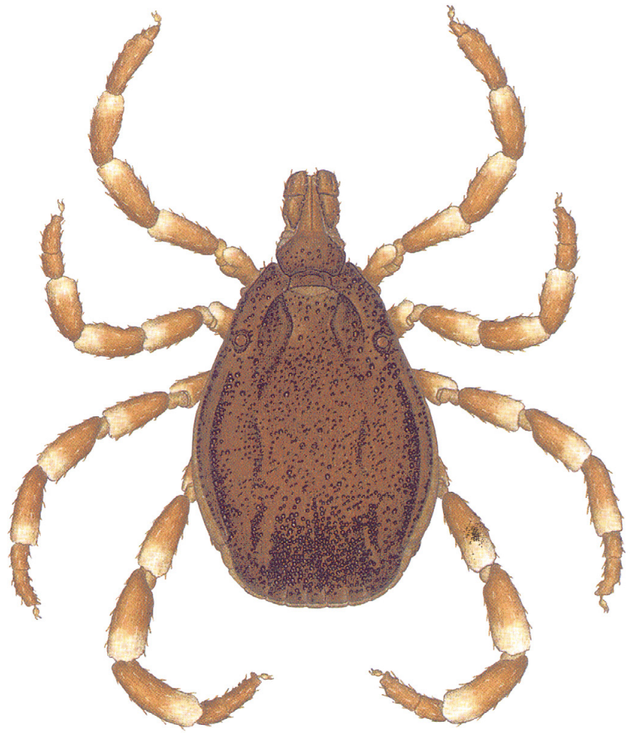
Adapted from Ticks and tick-borne diseases[1]

BONT-LEGGED TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE



ADULT MALE



DISEASES

CATTLE

- **Anaplasmosis**
- **Severe abscesses**
- **Sweating sickness**
- **Secondary infections**
- **Wounds that attract blowflies resulting in myiasis**

LAMBS

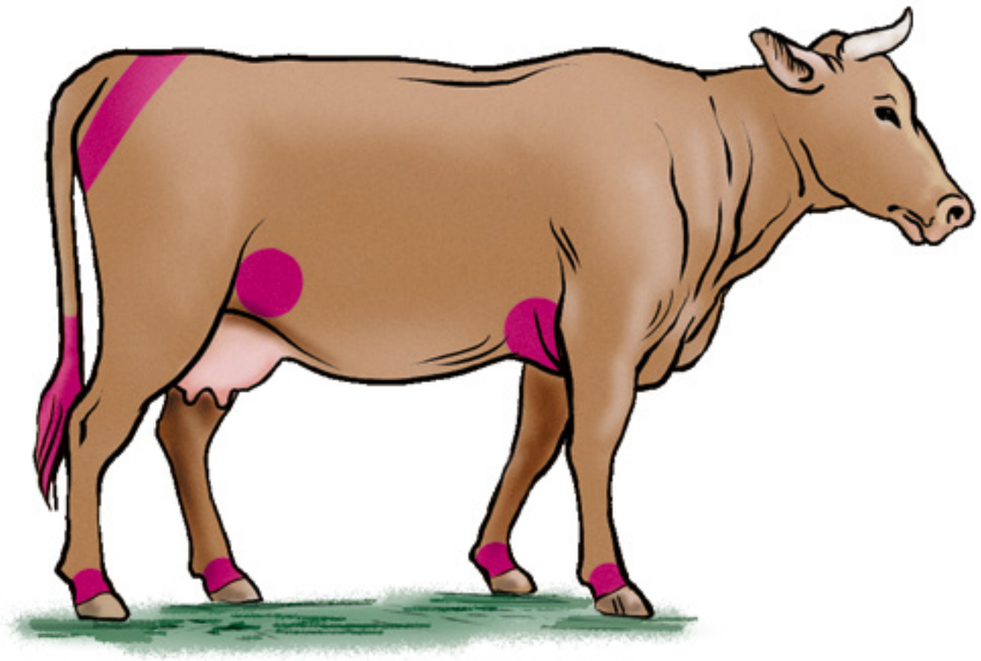
- **Lameness**

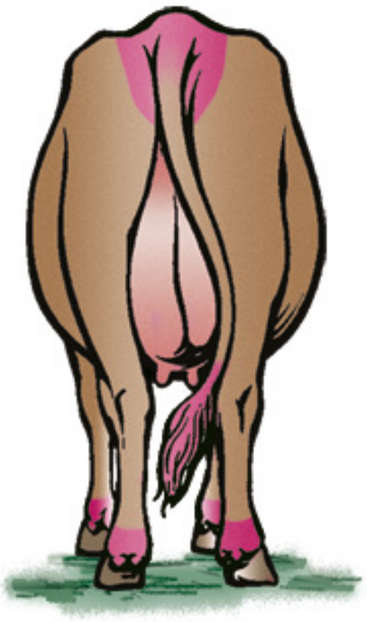
HUMANS

- ***Rikettsia conori*** **(tick-bite fever)**

Adapted from Ticks and tick-borne diseases[1]

BONT-LEGGED TICK
ATTACHMENT SITES



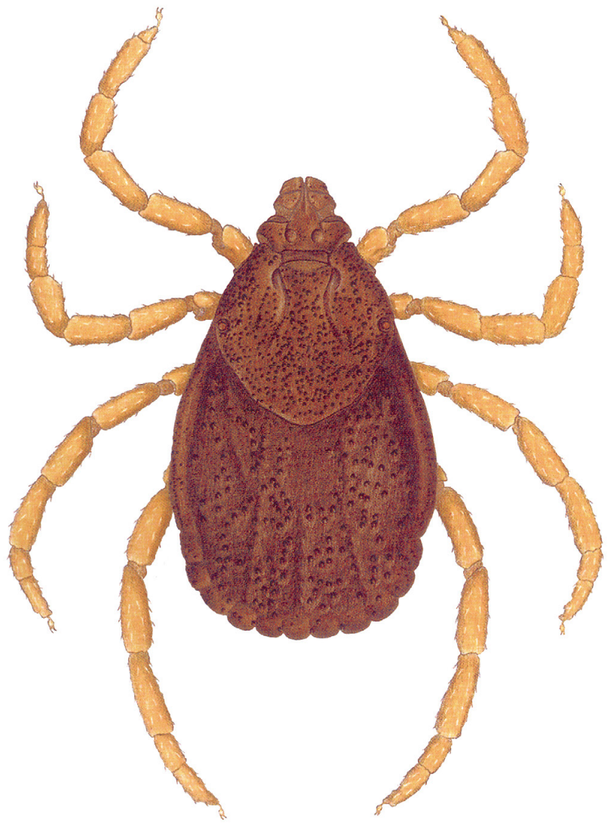


- **Anus**
- **Genitals**
- **Hocks**

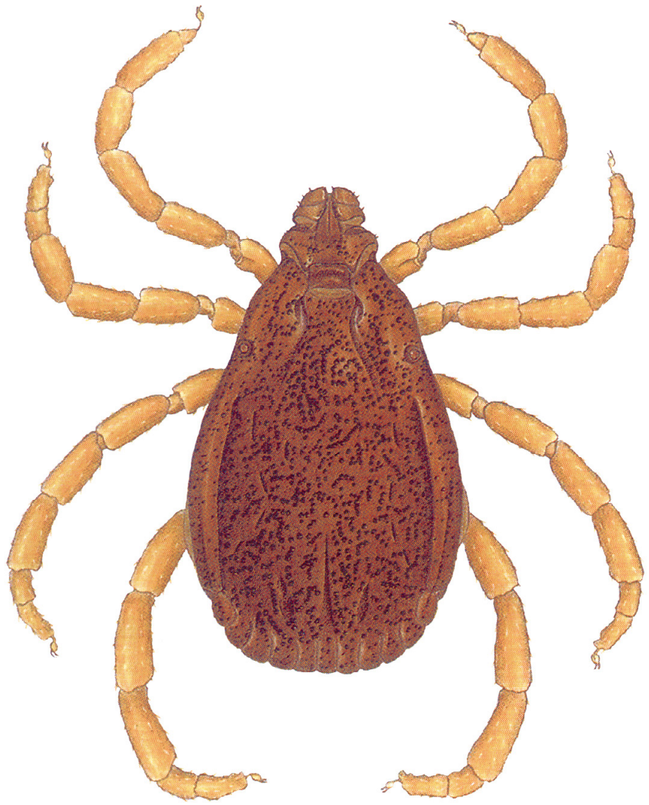
Adapted from Ticks and tick-borne diseases[1]

RED-LEGGED TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE



ADULT MALE

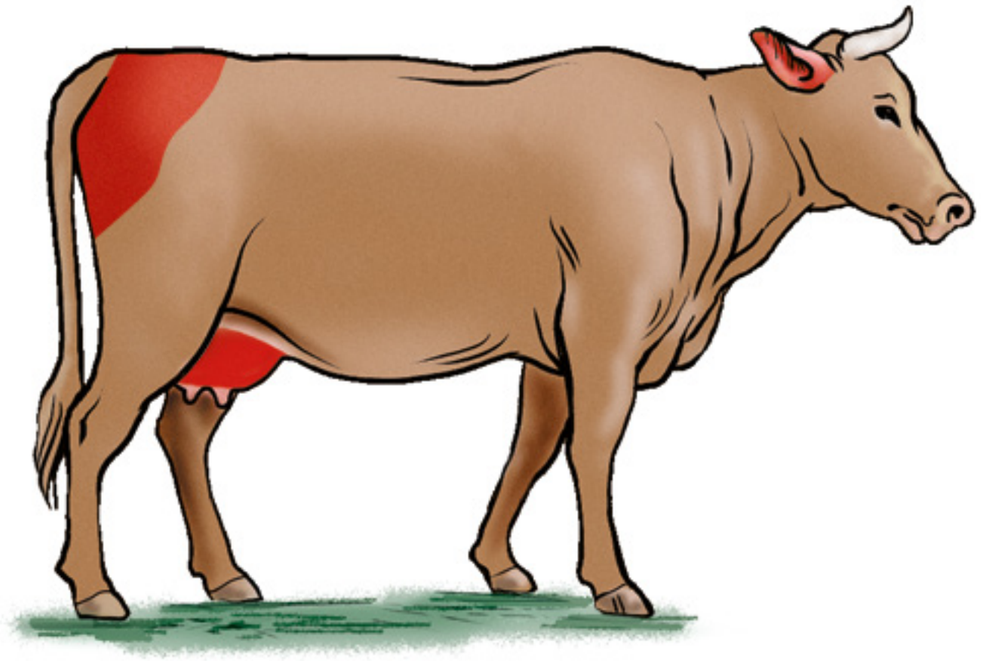


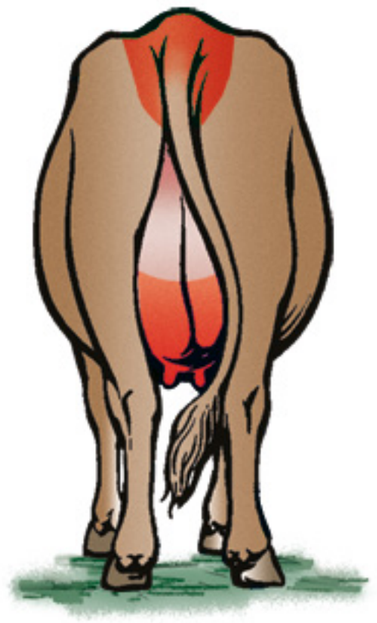
DISEASES

- **Gallsickness in horse** (equine) **family**
- **African Redwater**
- **East Coast Fever**
- **Spring paralysis**
- **Cattle Theileriosis**
- **Anaplasmosis**
- **Spring lamb paralysis – toxicosis**

Adapted from Ticks and tick-borne diseases[1]

RED-LEGGED TICK
ATTACHMENT SITES





Adults:

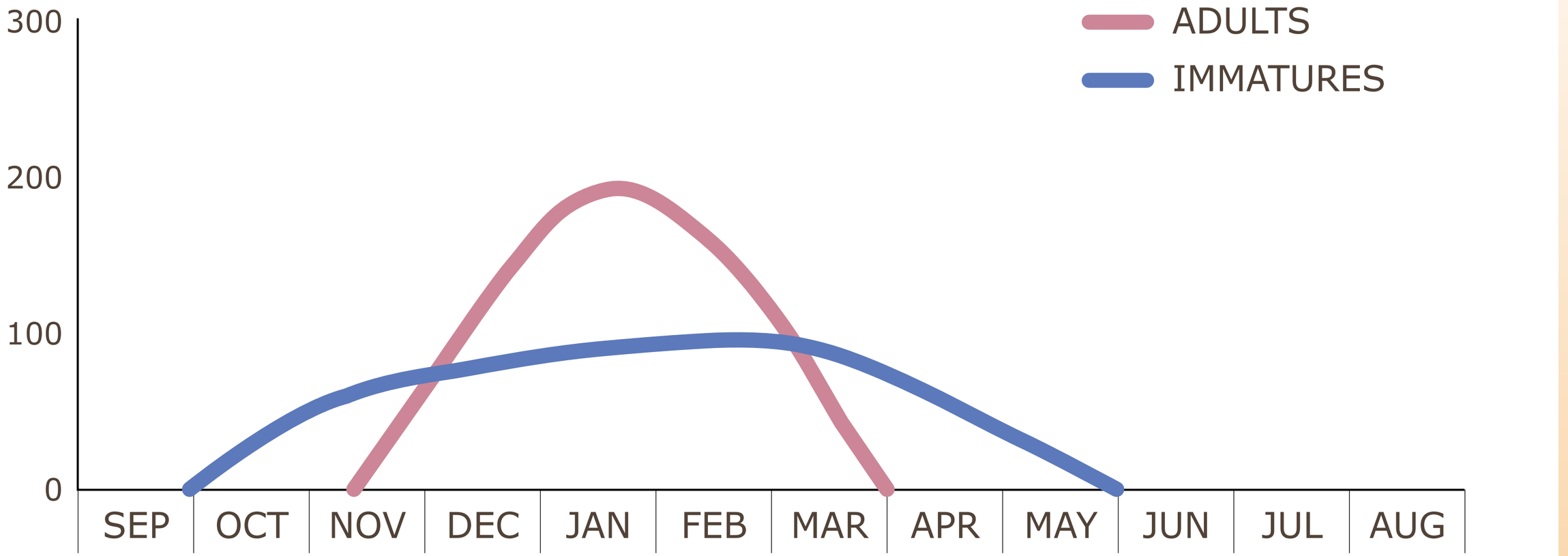
- **Under the tail around the anus**
- **Flank, axilla**
- **Sternum**

Larvae:

- **Deep inside the ear canal**

Adapted from Ticks and tick-borne diseases[1]

TWO-HOST TICKS
SEASONAL OCCURRENCE



Adapted from Ticks and tick-borne diseases[1]

VIRBAC SOLUTION FOR
TWO-HOST TICK CONTROL

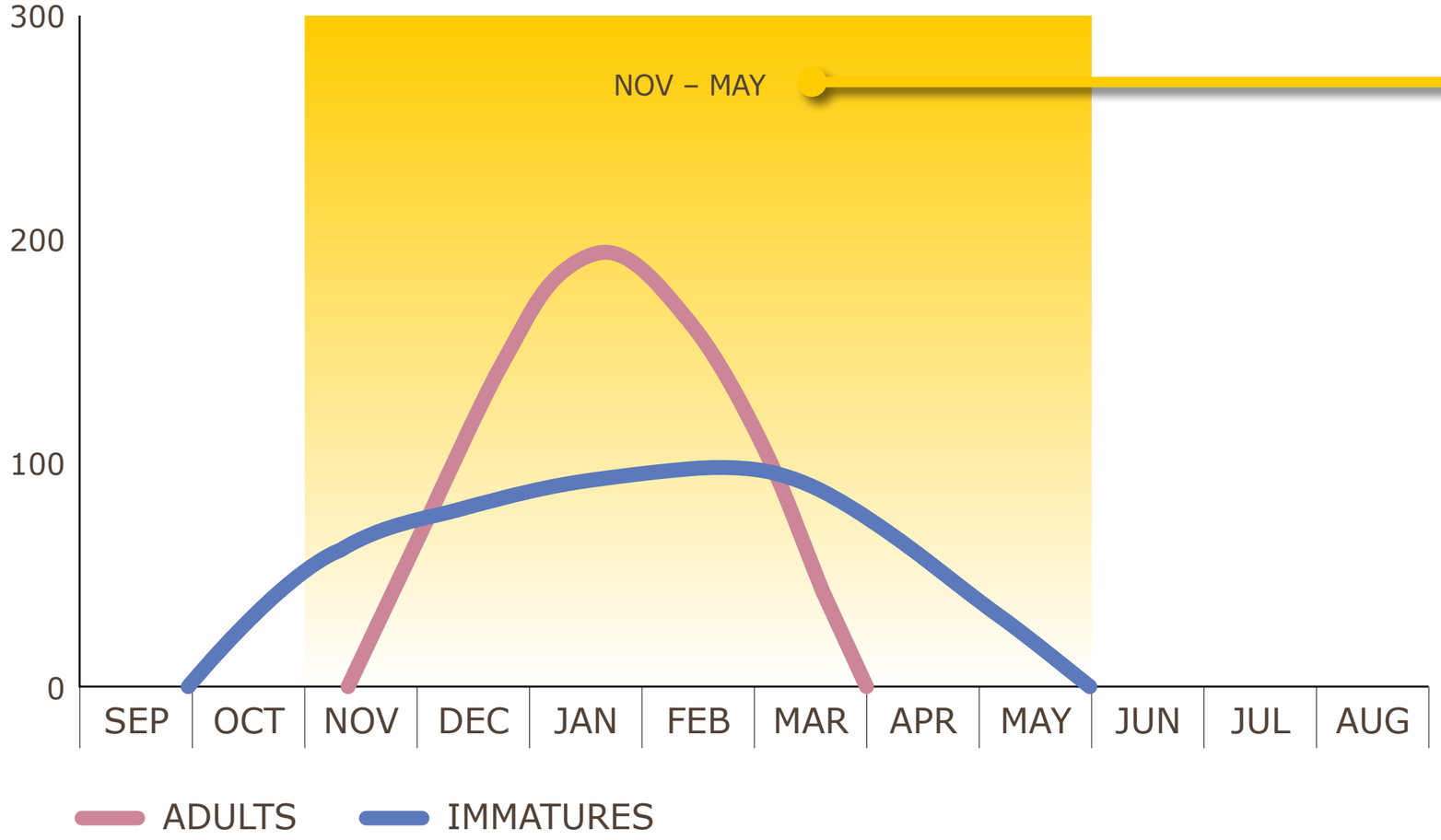
- Dip animals in **summer** to reduce immature and adult stages
- Spot treatments can be done frequently

With high tick challenges or when animals are moved to rested camps:

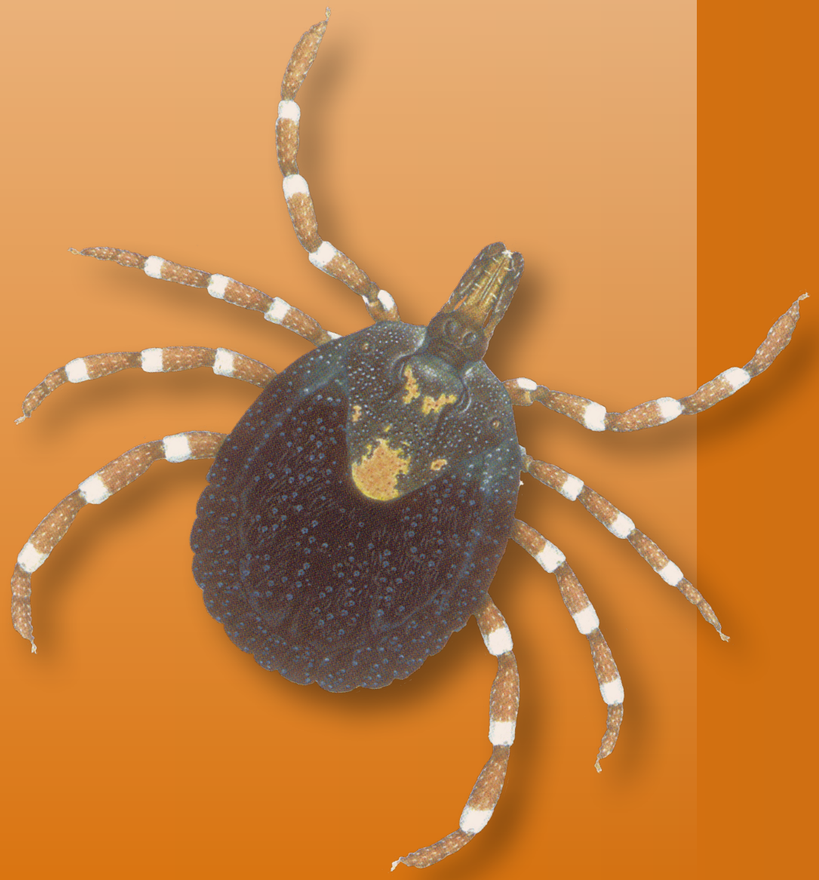
- 5, 5, 4 day dip strategy
- Always use contact dips:
  - AMIPOR®
  - MULTIDIP

AMIPOR®
MULTIDIP

VIRBAC TREATMENT STRATEGY FOR
TWO-HOST TICK CONTROL



AMIPOR®
MULTIDIP



There are 3 different three-host ticks:

BONT TICK

Amblyomma hebraeum

BROWN EAR TICK

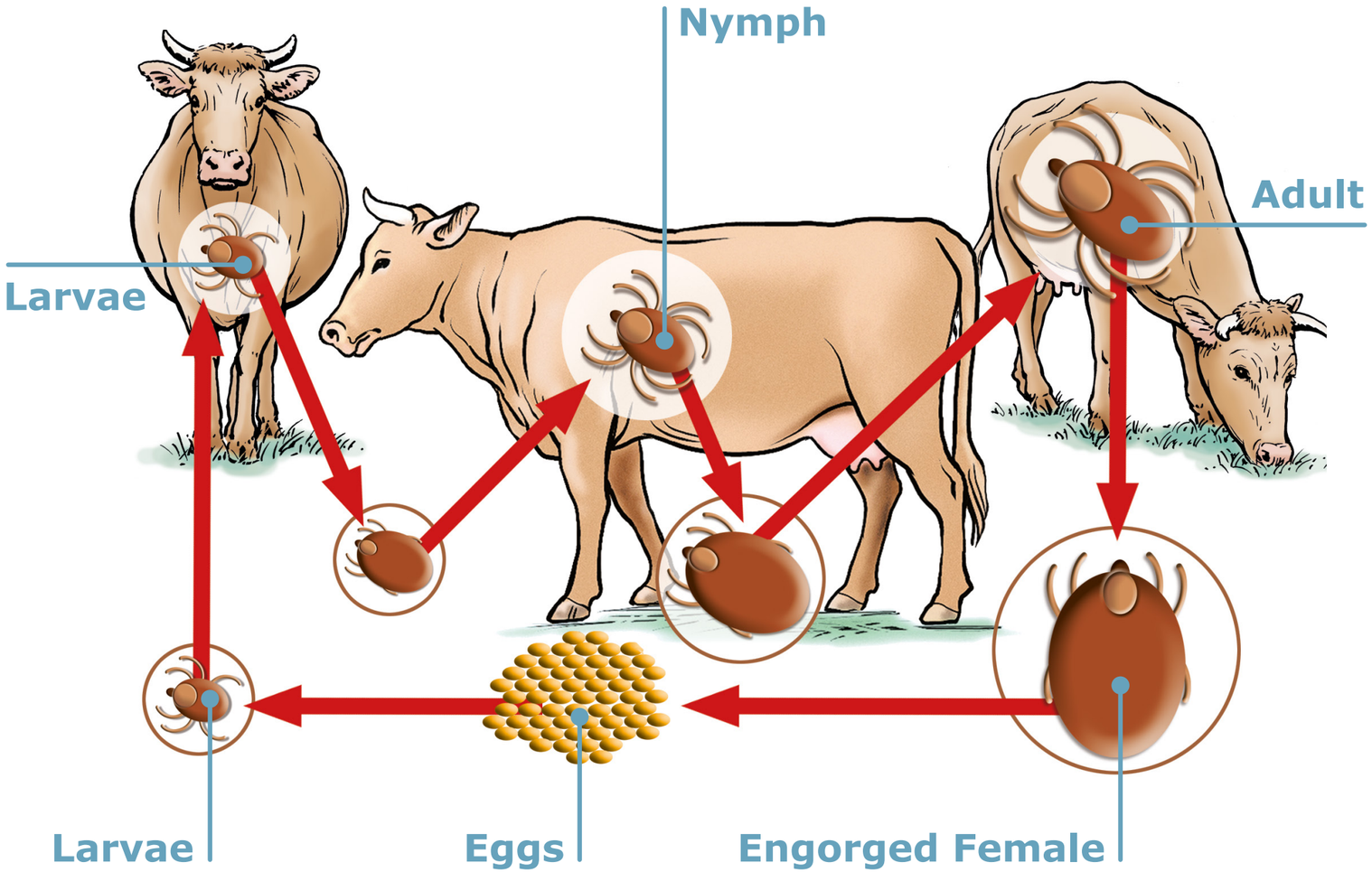
Rhipicephalus appendiculatus

KAROO PARALYSIS TICK

Ixodes rubicundus

THREE-HOST TICKS

THREE-HOST TICKS
LIFECYCLE



THESE TICKS NEED 3 ANIMALS TO COMPLETE THEIR LIFE CYCLE

- Larvae, nymph and adult stages are on different hosts

BONT TICK

- **Lifecycle takes ± 1 – 3 years to complete**
- **Female lays 18 000 eggs**

BROWN EAR TICK

- **Lifecycle takes ± 1 year to complete**
- **Female lays 5 000 eggs**

KAROO PARALYSIS TICK

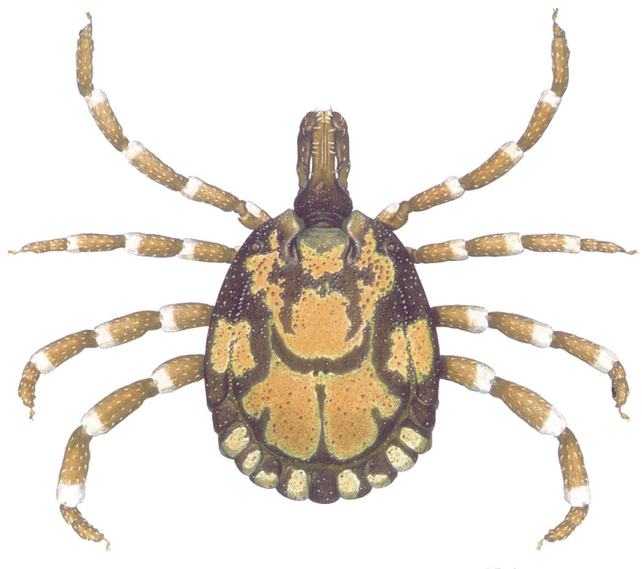
- **Lifecycle takes ± 1 – 2 years to complete**
- **Female lays 2 000 – 4 000 eggs**

Adapted from Ticks and tick-borne diseases[1]

BONT TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE

ADULT MALE



DISEASES

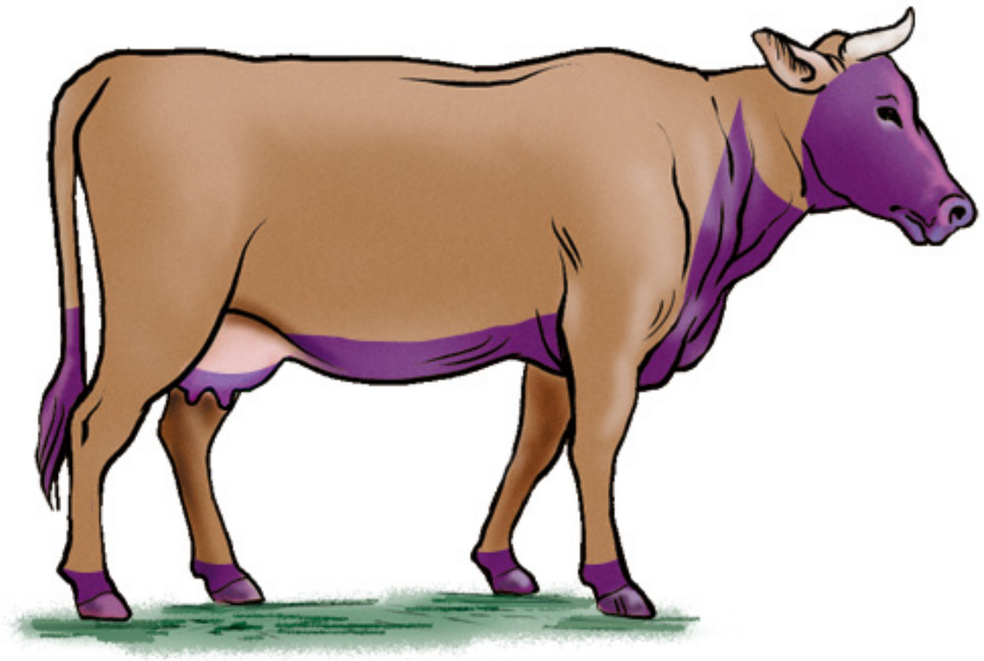
- **Heartwater**
- **Cattle Theileriosis**
- **Abscesses**
- **Maggots**

HUMANS

- ***Rikettsia africae*** **(tick-bite fever)**

Adapted from Ticks and tick-borne diseases[1]

BONT TICK
ATTACHMENT SITES



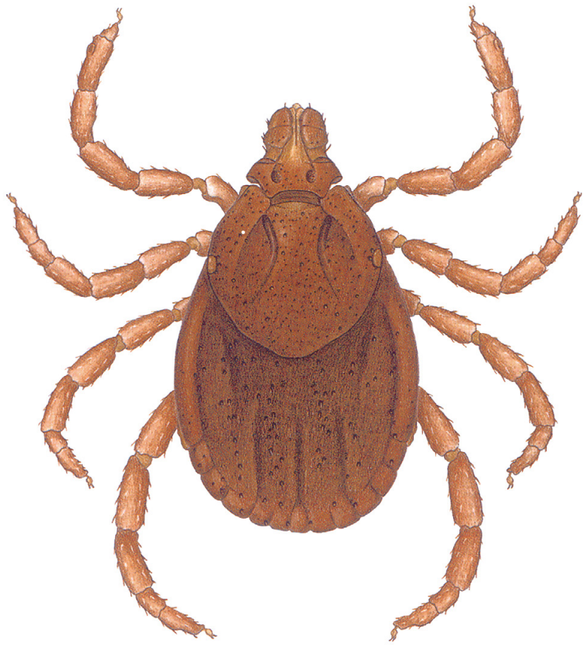
Hairless parts of the lower body, namely:

- **Flank**
- **Axilla**
- **Dewlap and neck skin**
- **Stomach**
- **Perineum and perianal area**
- **Tail floccus** (hair tufts)

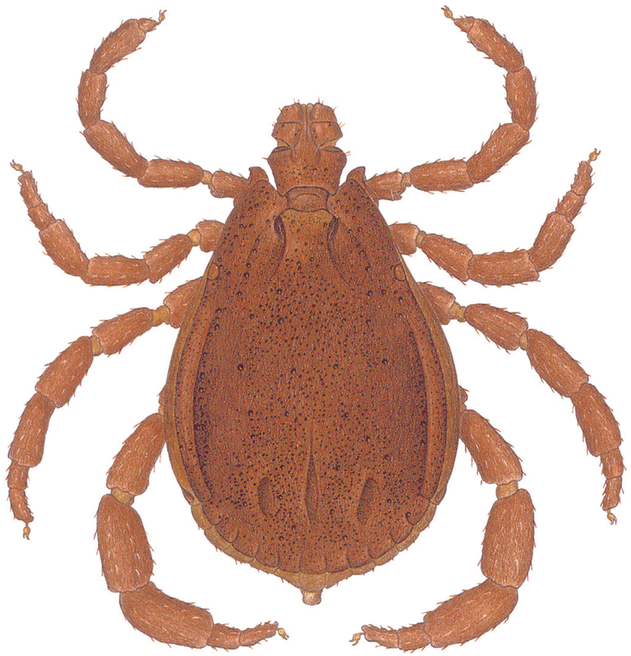
Adapted from Ticks and tick-borne diseases[1]

BROWN EAR TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE



ADULT MALE



DISEASES

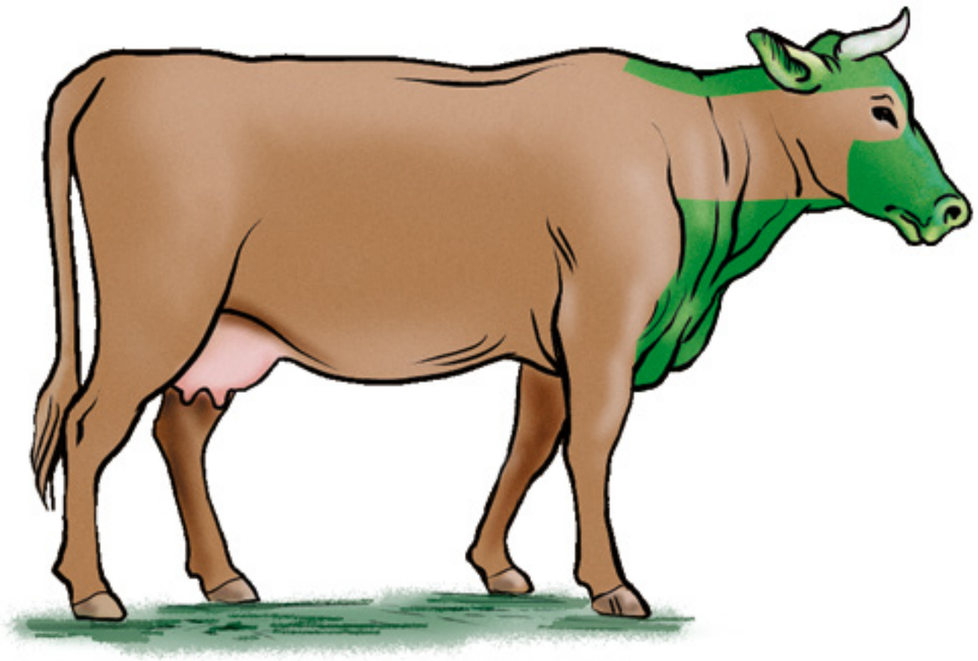
- **Tick Toxicosis**
- **Corridor/buffalo disease**
- **Cattle Theileriosis**
- **East Coast Fever**
- **Lumpy skin disease**

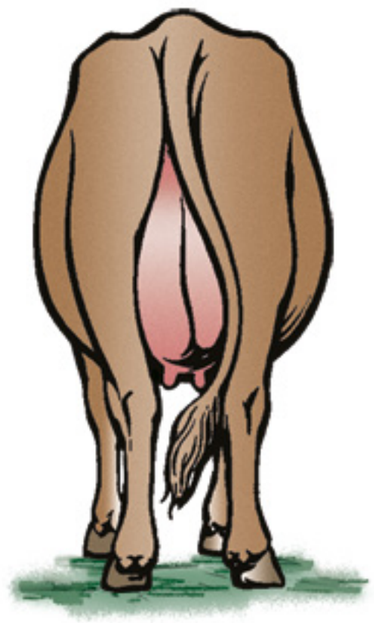
HUMANS

- ***Rikettsia conori*** **(tick-bite fever)**

Adapted from Ticks and tick-borne diseases[1]

BROWN EAR TICK
ATTACHMENT SITES



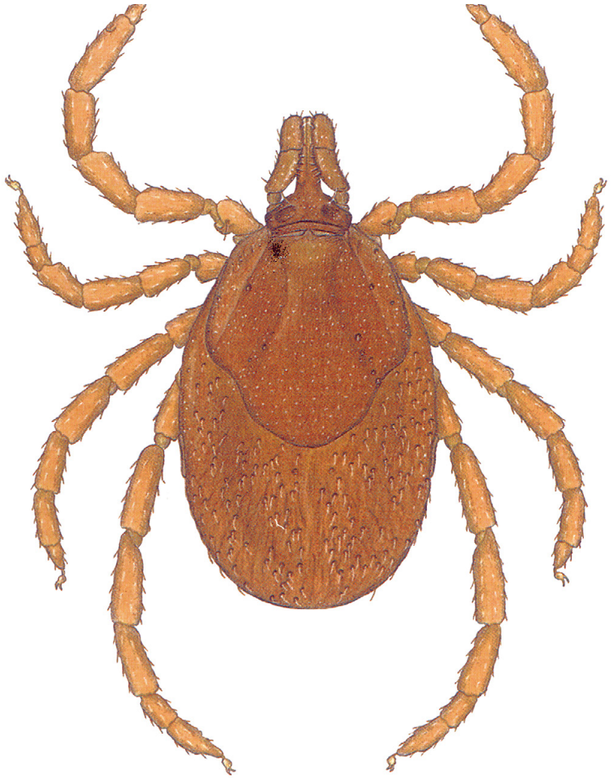


- **Ears** (pinna)
- **Around the eyes**
- **Upper part of neck**
- **Behind the crown of head** (poll)
- **Perineum**
- **Below the stomach**

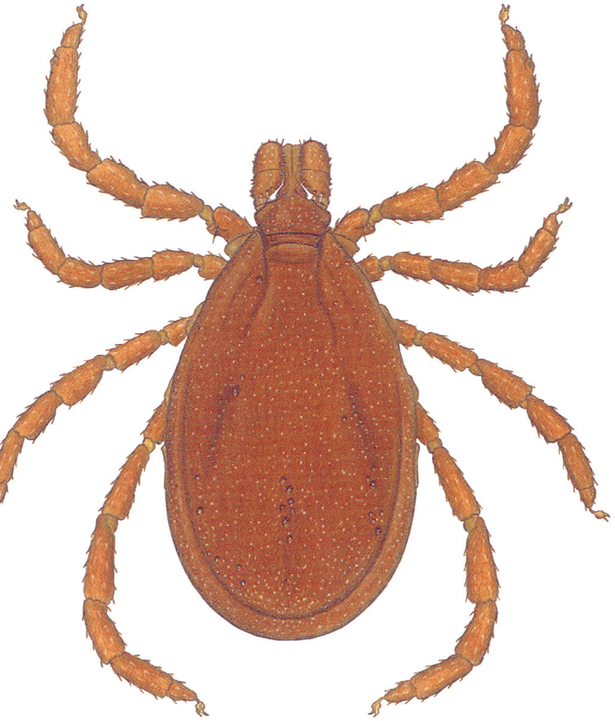
Adapted from Ticks and tick-borne diseases[1]

KAROO PARALYSIS TICK
IDENTIFICATION AND DISEASES

ADULT FEMALE



ADULT MALE

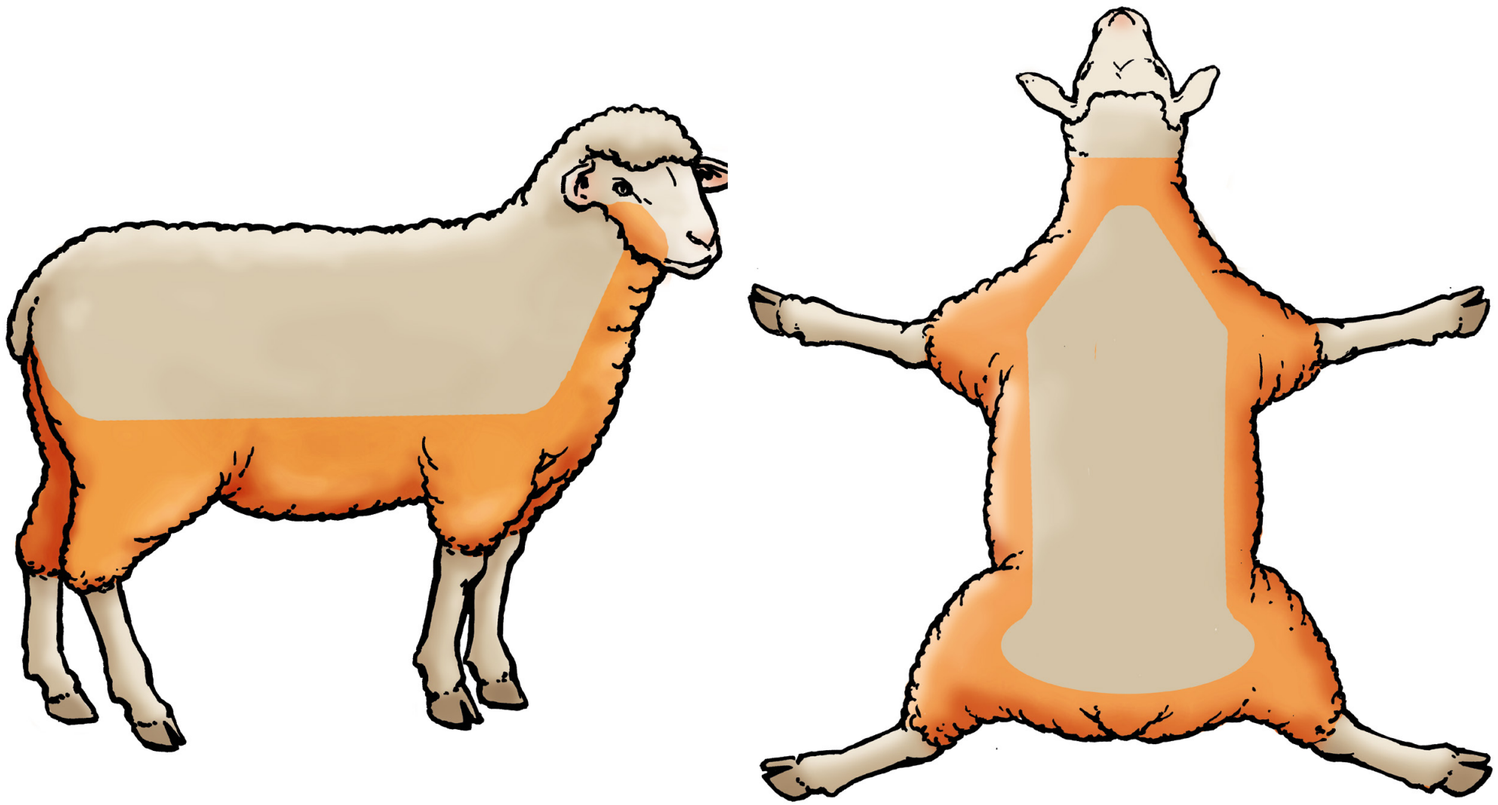


DISEASES

- **Tick paralysis**

Adapted from Ticks and tick-borne diseases[1]

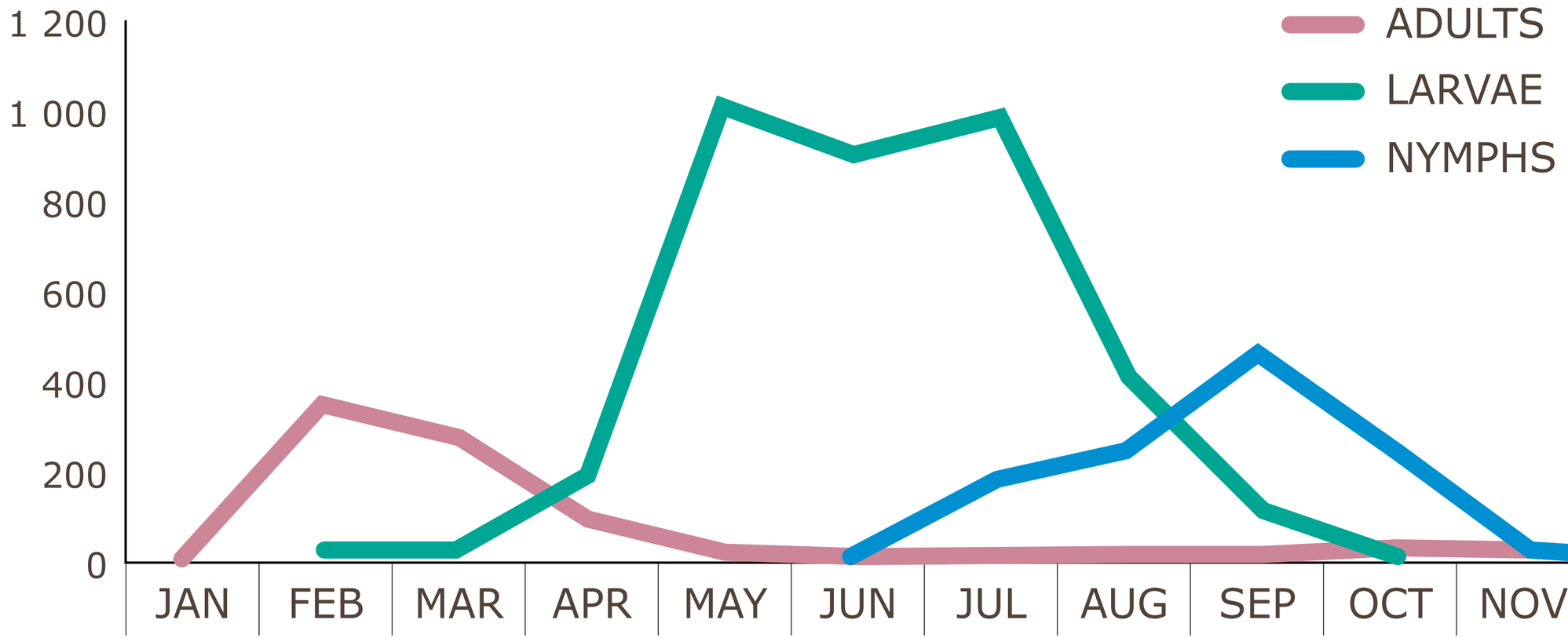
KAROO PARALYSIS TICK
ATTACHMENT SITES



- **Undersides of body and neck**
- **Legs above the knees**
- **Cheeks**
- **Lower jaw**

Adapted from Ticks and tick-borne diseases[1]

THREE-HOST TICKS
SEASONAL OCCURRENCE



Adapted from Ticks and tick-borne diseases[1]

VIRBAC SOLUTION FOR
THREE-HOST TICK CONTROL

BROWN EAR TICK & BONT TICK CONTROL

- Dip animals in **winter** to reduce immature stages
- Dip animals in **summer** to reduce adult stages
- Spot treatments can be done frequently

With high tick challenges or when animals are moved to rested camps:

- 5, 5, 4 day dip strategy
- Always use contact dips:
  - AMIPOR®
  - MULTIDIP

AMIPOR®
MULTIDIP

VIRBAC SOLUTION FOR
THREE-HOST TICK CONTROL

KAROO PARALYSIS TICK CONTROL

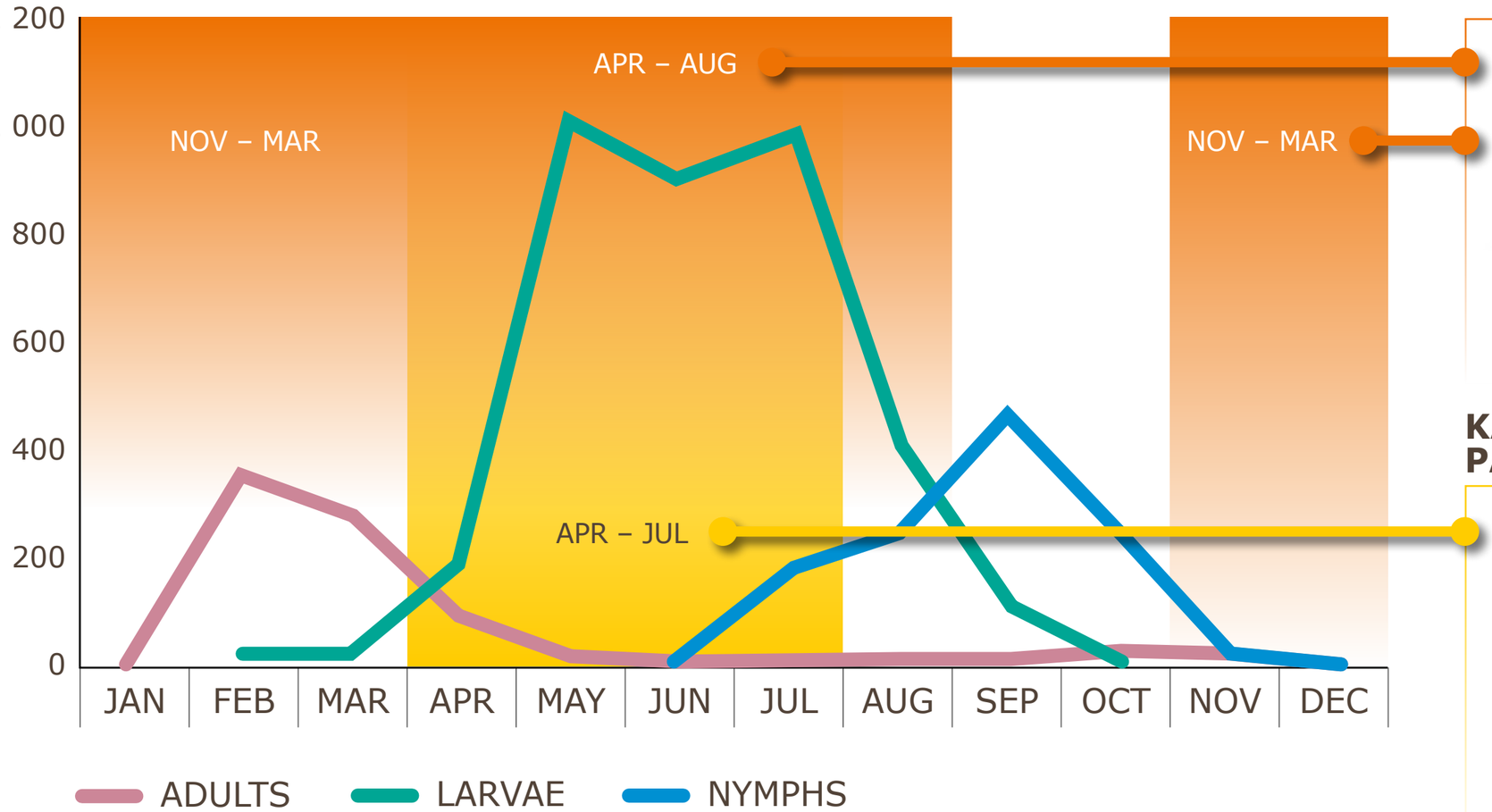
- Dip animals in **early winter** to reduce immature & adult stages
- Treat animals frequently in karoo paralysis season
- Spot treatments can be done frequently

With high tick challenges or when animals are moved to rested camps:

- 5, 5, 4 day dip strategy
- Always use contact dip:
  - AMIPOR®

AMIPOR®

VIRBAC TREATMENT STRATEGY FOR **THREE-HOST TICK CONTROL**



AMIPOR®
MULTIDIP

KAROO PARALYSIS

AMIPOR®

The **Virbac** solution
– **quality** and **reliability**

- Modern formulation technology
- Products choice for cattle, game and sheep
- Choice of internal and external parasite control
- Rotational program – protection of chemical actives
- Environmentally friendly

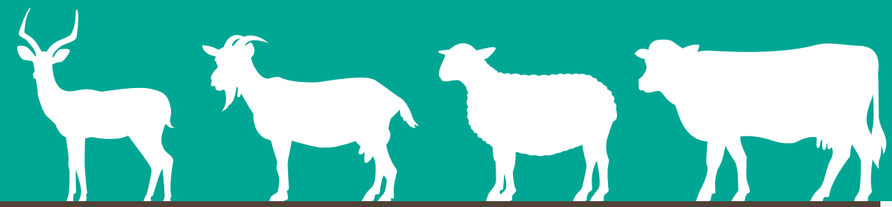
...making **Double Sure**

THE PRODUCTS

AMIPOR® | ELIMINATE | VIRBAMEC® LA | MULTIDIP

ECONOMIC IMPACT | TICKS AND TICK CONTROL | THE PRODUCTS

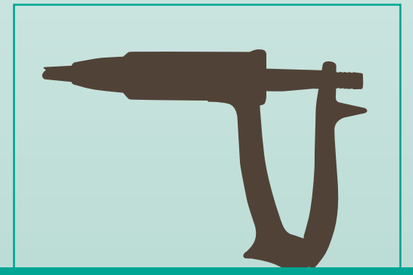
AMIPOR®



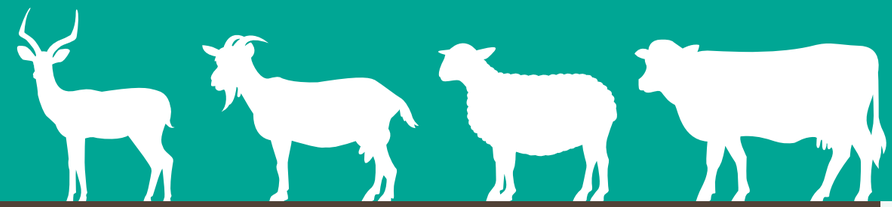
THE **FIRST COMBINATION POUR-ON** FOR COMPREHENSIVE ECTOPARASITE CONTROL

AMITRAZ	1 % m/v
CYPERMETHRIN	1 % m/v
PIPERONYL BUTOXIDE	5 % m/v

POUR-ON

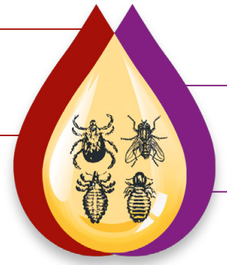


AMIPOR®



THE **FIRST COMBINATION POUR-ON** FOR COMPREHENSIVE ECTOPARASITE CONTROL

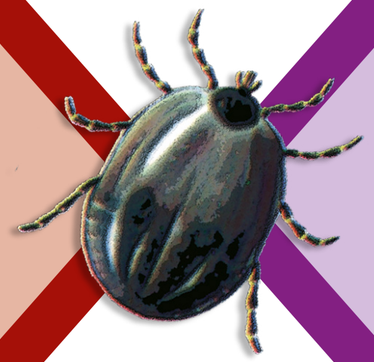
DOUBLE SURE ON TICKS



DOUBLE SURE ON FLIES

A

- Paralyse & detach ticks
- Limits disease transmission
- Inhibits larval development



- Broad-spectrum tick control
- Hyperstimulates nervous system
- Irreversible damage to nervous system

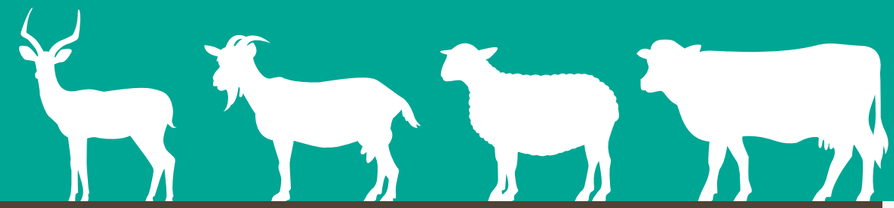
C

- Broad-spectrum fly control
- Good knock-down effect
- Kills on contact

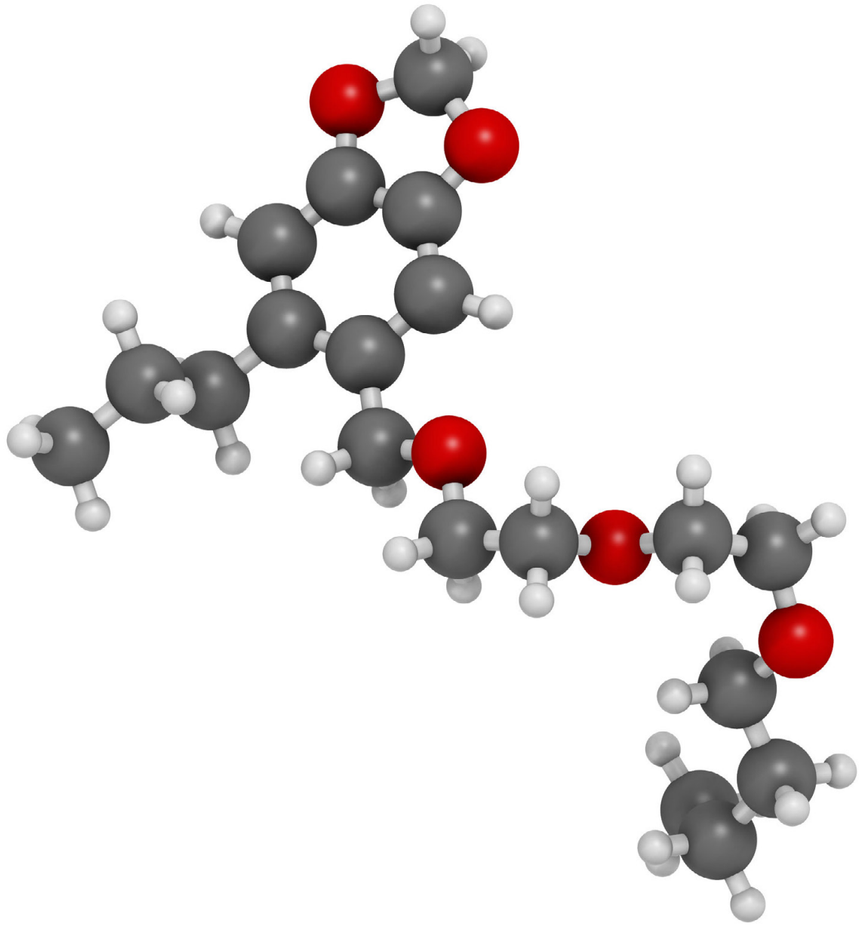
AMITRAZ

CYPERMETHRIN

AMIPOR®



THE **FIRST COMBINATION POUR-ON** FOR COMPREHENSIVE ECTOPARASITE CONTROL



PIPERONYL BUTOXIDE (PBO)

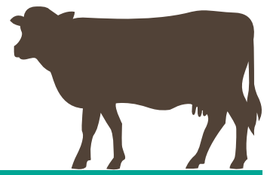
Piperonyl butoxide is a synergistic chemical:

- That enhances the effectiveness of the active ingredients
- Overcome resistant insect populations – **tough to kill ticks** will be affected

The ***ideal*** ratio of pyrethroid to PBO to obtain
optimum synergism
= 1:5 to 1:8

AMIPOR®

THE **FIRST COMBINATION POUR-ON** FOR COMPREHENSIVE ECTOPARASITE CONTROL



CATTLE

TICKS

HOUSE FLIES

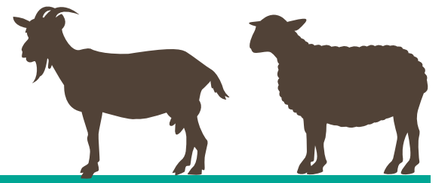
STABLE FLIES

FACE FLIES

BITING LICE

SUCKING LICE

5 ml PER 50 kg



SHEEP AND GOATS

KAROO PARALYSIS TICKS

RED LICE

KAROO PARAYLSIS TICKS

2 ml PER 10 kg

RED LICE

4 ml PER 10 kg

GAME

TICKS

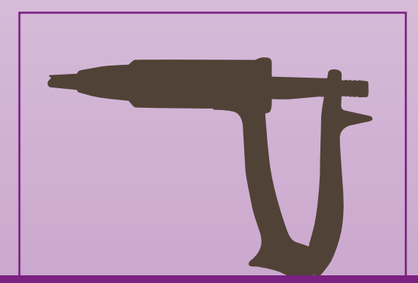
5 ml PER 50 kg

ELIMINATE

TRANSDERMAL INTERNAL AND EXTERNAL PARASITE CONTROL

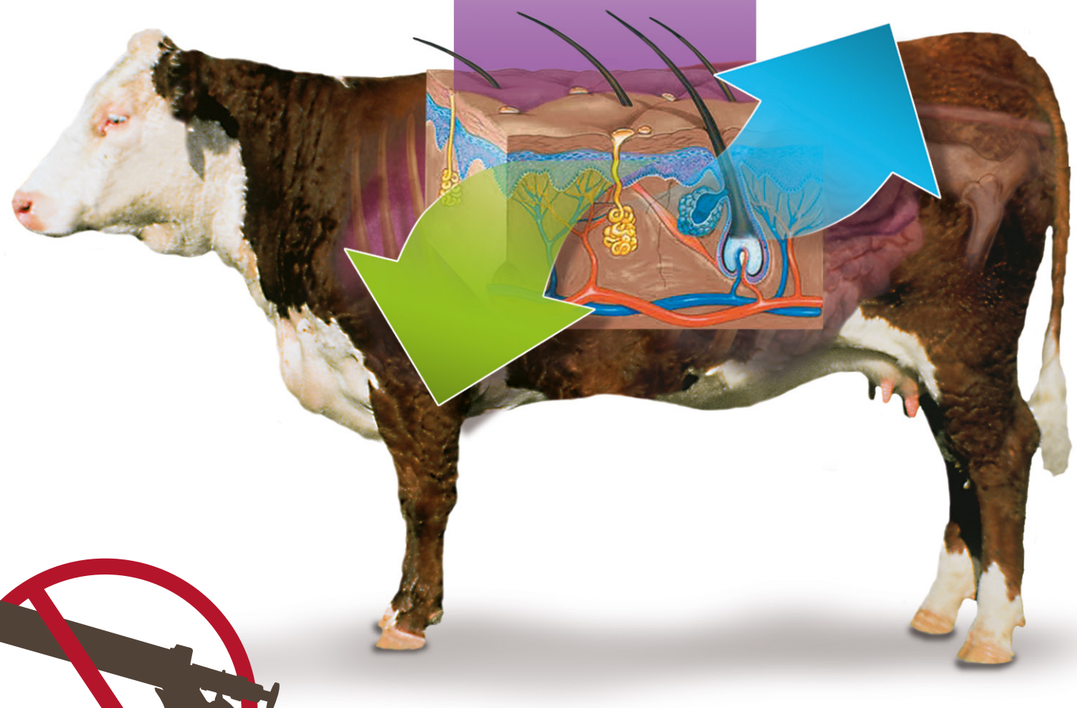
ABAMECTIN 0,5 % m/v

POUR-ON



ELIMINATE

TRANSDERMAL INTERNAL AND EXTERNAL PARASITE CONTROL



RAIN RESISTANT

The efficacy of ELIMINATE is not adversely affected if applied when the hide is wet, or if rain occurs shortly after application. However treatment of animals under these circumstances is not recommended.

TRANSDERMAL TECHNOLOGY

The formulation allows the active ingredient (abamectin) to be absorbed through the skin to deliver effective and reliable parasite control

ELIMINATE

TRANSDERMAL INTERNAL AND EXTERNAL PARASITE CONTROL

CATTLE AND GAME

INTERNAL PARASITES

	IMMATURES	ADULTS	PERSISTENCY
WIREWORM	✓	✓	14 DAYS
BROWN STOMACHWORM*	✓	✓	14 DAYS
CATTLE BANKRUPTWORM	✓	✓	14 DAYS
HOOKWORM	✓	✓	
NODULAR WORM	✓	✓	21 DAYS
LUNG WORM	✓	✓	28 DAYS
EYEWORM		✓	

*including inhibited stages

KEY ✓ **Control** (≥ 90 % effective)

✓ **Aids in control** (60 – 89 % effective)

EXTERNAL PARASITES

Controls **BLUE TICKS**
for control of blue ticks – treatment must be repeated every 21 days

Aids in the control of **MULTI-HOST TICKS**

Kills **SUCKING** and **BITING LICE**

Controls **MANGE MITES**

Controls **HORN FLY**
(Haematobia sp) for up to 21 days

1 ml PER 10 kg

VIRBAMEC® LA

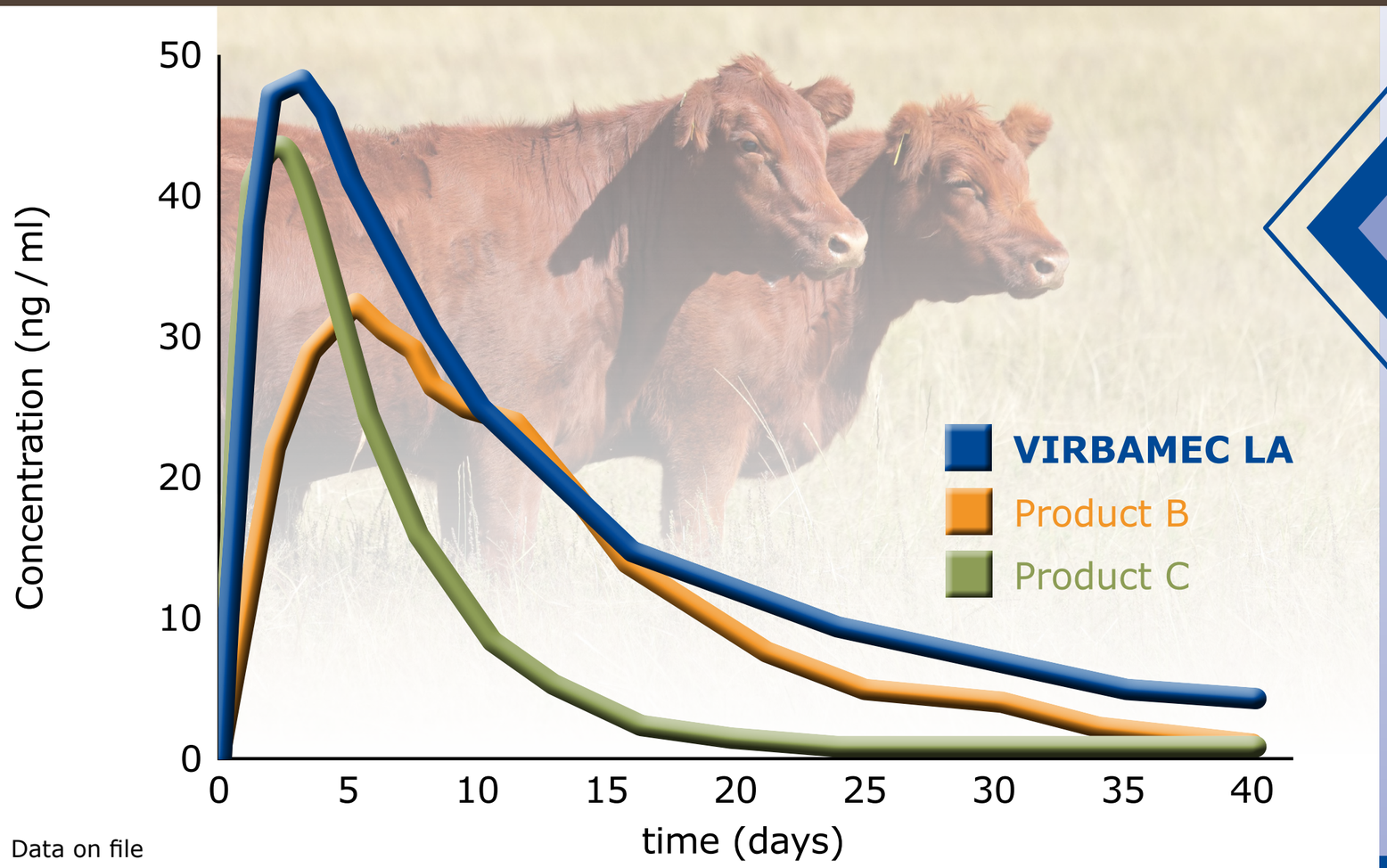
THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL

IVERMECTIN 1 % m/v

INJECTABLE

VIRBAMEC® LA

THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL



Data on file

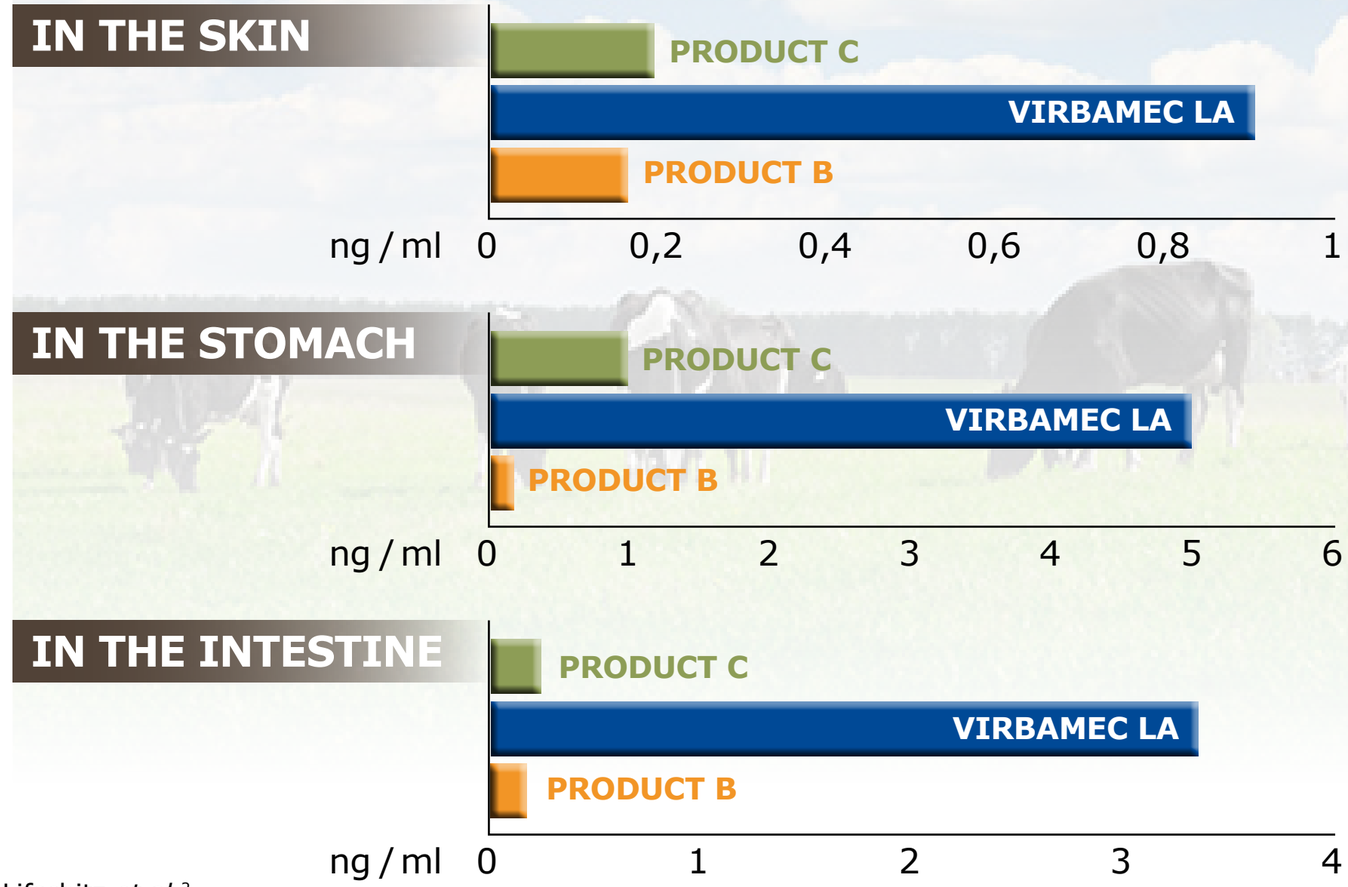
GREATER PEAK PLASMA LEVELS

Higher plasma levels means **more active available** to kill parasites under all conditions

Higher plasma level means **greater therapeutic action**

VIRBAMEC® LA

THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL



Lifschitz *et al.*[2]

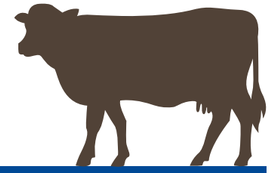
MORE ACTIVE AVAILABLE IN TISSUES

... proof that **VIRBAMEC LA** has a better formulation technology – delivering more active to the tissues where the parasites live

More active means better action, better control and healthier animals under all conditions

VIRBAMEC® LA

THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL



KEY ✓ **Control** (≥ 90 % effective)

CATTLE

INTERNAL PARASITES

	IMMATURES	ADULTS	PERSISTENCY
WIREWORM*	✓	✓	35 DAYS
BROWN STOMACHWORM*	✓	✓	35 DAYS
BANKRUPTWORM	✓	✓	28 DAYS
HOOKWORM	✓	✓	42 DAYS
NODULAR WORM	✓	✓	49 DAYS
LUNGWORM	✓	✓	21 DAYS
EYEWORM		✓	
LONG-NECKED BANKRUPTWORM		✓	
WHITE BANKRUPTWORM		✓	
ASCARIDS		✓	
FALSE BRUISING		✓	

EXTERNAL PARASITES

- **BLUE TICKS** up to 42 days
- **SUCKING LICE**
- **WARBLE FLIES**
- **MANGE MITES**
- **CATTLE SCREW WORM**
- **SANDTAMPANS**

1 ml PER 50 kg

*including inhibited stages

VIRBAMEC® LA

THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL

KEY ✓ **Control** (≥ 90 % effective)
✓ **Aids in control** (60 – 89 % effective)

SHEEP

INTERNAL PARASITES

	IMMATURES	ADULTS
WIREWORM	✓	✓
NOOITGEDACHT RESISTANT WIREWORM STRAIN		✓
BROWN STOMACHWORM	✓	✓
BANKRUPTWORM	✓	✓
HOOKWORM	✓	✓
NODULAR WORM	✓	✓
LARGE-MOUTHED BOWELWORM	✓	✓
LUNGWORM	✓	✓
LONG-NECKED BANKRUPTWORM	✓	✓
WHIPWORM		✓
WHITE BANKRUPTWORM	✓	✓

EXTERNAL PARASITES

SHEEP SCAB

MANGE MITES

AUSTRALIAN ITCH MITE

SUCKING LICE

NASALBOT
controls all stages
(1st, 2nd and 3rd instar larvae)

1 ml PER 50 kg

VIRBAMEC® LA

THE RELIABLE CHOICE FOR INTERNAL AND EXTERNAL PARASITE CONTROL

KEY ✓ **Control** (≥ 90 % effective)

PIGS

INTERNAL PARASITES

	IMMATURES	ADULTS
ASCARIDS	✓	✓
WHITE BANKRUPTWORM	✓	✓
NODULAR WORM	✓	✓
LUNGWORM	✓	✓
WHIPWORM		✓

EXTERNAL PARASITES

SUCKING LICE (KILLS)

MANGE MITES

with a persistent activity for 56 days

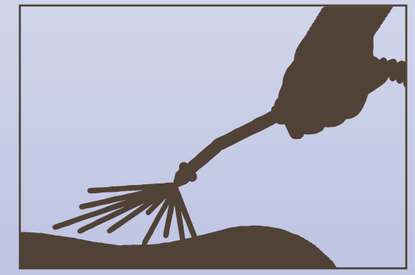
1 ml PER 33 kg

MULTIDIP

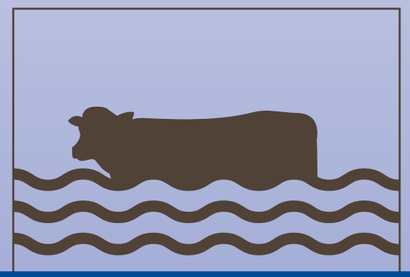
THE **COMBINATION CATTLE DIP** FOR COMPREHENSIVE ECTOPARASITE CONTROL

CYMIAZOLE	175 g/l
CYPERMETHRIN	25 g/l

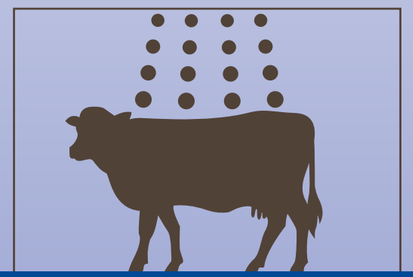
HAND SPRAYING



PLUNGE DIP

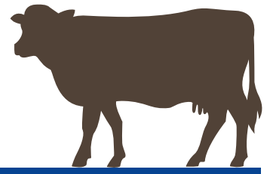


SPRAY RACE



MULTIDIP

THE **COMBINATION CATTLE DIP** FOR COMPREHENSIVE ECTOPARASITE CONTROL



CATTLE

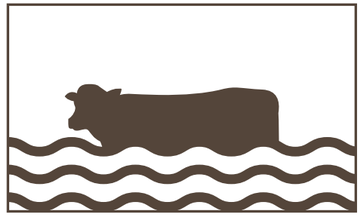
TICKS
DETACHING EFFECT
LICE
NUISANCE FLIES
BITING FLIES
FACE FLIES
SCREW WORMS

DIPPING INTERVALS

TICKS, FLIES AND SCREW WORMS
Dip or spray weekly

LICE
Dip or spray when necessary

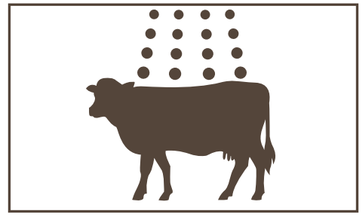
PLUNGE DIP



FRESH FILL (CHARGE)
1,5 L TO 1000 L WATER

REPLENISH
3 L TO 1000 L WATER

SPRAY RACE



FRESH FILL (CHARGE)
1,5 L TO 1000 L WATER

Boost the spray wash by adding 200 ml of MultiDip **after every 100 head of cattle dipped ***

HAND SPRAYING

15 ml PER 10 L WATER

Thoroughly wet the animal by spraying from below upwards so that the hair is lifted by the spray. Concentrate on the ears, under the tail and in the tail brush.

* NOTE: It is not good spray race practice to carry dip wash over from one spraying to the next. Only make up sufficient wash for each spraying (± 3 litres per head plus the amount for the pump system).

REFERENCES

1. Spickett AM. Ticks and tick-borne diseases
2. Lifschitz *et al*. Comparative distribution of ivermectin and doramectin to parasite location tissues in cattle. *Veterinary Parasitology*. 2000;87:327-448

Virbac (Pty) Ltd (Reg. No. 1990/003743/07)
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AMIPOR® – Reg. No. G2058 (Act 36/1947)
Namibia Reg. No. V06/19.3.9/75 NS0
Botswana Reg. No: W130656
Zambia Reg. No: 359/708V **GS**
Contains: Amitraz 1 % m/v, Cypermethrin 1 % m/v and Piperonyl Butoxide 5 % m/v

ELIMINATE – Reg. No. G3348 (Act 36/1947)
Namibia Reg. No. V09/18.1.2/77 NS0
Botswana Reg. No: W130659
Contains: Abamectin 0,5 % m/v

VIRBAMEC® LA – Reg. No. G2885 (Act 36/1947)
Namibia Reg. No. V09/18.1.2/109 NS0
Contains: Ivermectin 1 % m/v

MULTIDIP – Reg. No. G4444 (Act 36/1947)
Botswana Reg. No. W130942
Zimbabwe Reg. No. 2019/80.16.12/9795
Contains: Cymiazole 175 g/l and Cypermethrin 25 g/l

October 2021