

Pastoral zone

Worm infections

Detection & Response

# Agenda Today.....

- Current snapshot of worm infections
- Signs & symptoms of worm infestations
- Early Detection
- Response

# Worm Alert....

One laminated A4 page

- **Early detection** (front)

  - Worm egg count

  - Drench Decision Aid (weather / host indicators)

  - Grazing strategies (to avoid being caught off guard)

- **Drenches** (on reverse)

# Current snapshot...

SHIRES	LONGREACH	MURWEH	PAROO
<b>Months</b>	<b>Average worm egg count (range) (epg)</b>		
Jan-Mar	17 (0-160)	20 (0-480)	400 (0- <u>1200</u> )
Apr-Jun	350 (0- <u>2000</u> )	750 (0- <u>1600</u> )	1100 (0- <u>6480</u> )
Jul-Sep	19 (0-20)	100 (40-240)	160 (0- <u>1280</u> )
Oct	0		800 (0- <u>1680</u> )

# In summary...

- ❖ Worm infections sustained over a few seasons
- ❖ Winter infections
- ❖ Treating 'tip of the iceberg'
  - Spike infections (Nov/ Dec & February March/April)
  - Early detection of the build-up
- ❖ Lost productivity – reaching target weights?
- ❖ Expect spike infections in next few months
  - Temperatures higher than 25°C



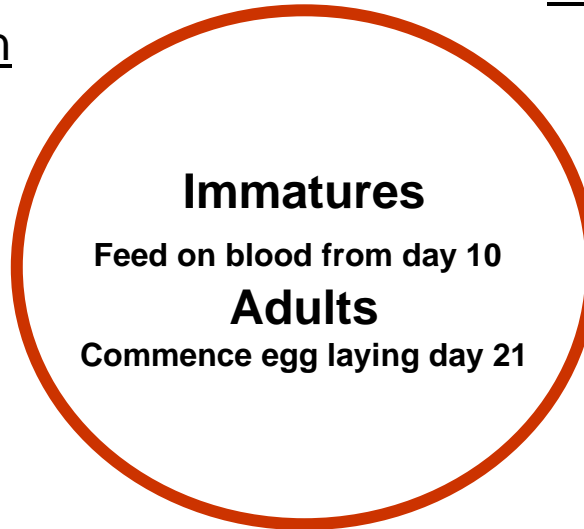
# About Barber's pole infections...

Barber's pole is the predominant parasite in the summer rainfall zone

When conditions are suitable (warm & moist)

- Burdens build-up explosively – 10 000 eggs/worm/day
- Barber's pole kills sheep
- Kills sheep quickly – blood letting & feeding parasite in abomasum
- No early warning of building infections
- 500epg is a significant infection in lambs & weaners

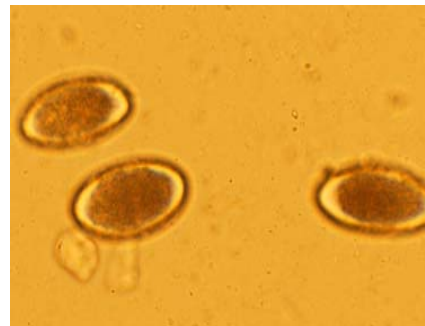
Infective larvae eaten  
during grazing



Worms in abomasum of sheep



Eggs in dung



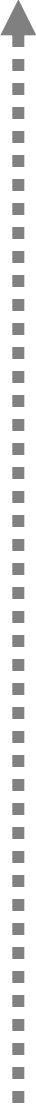
Infective larvae on grass



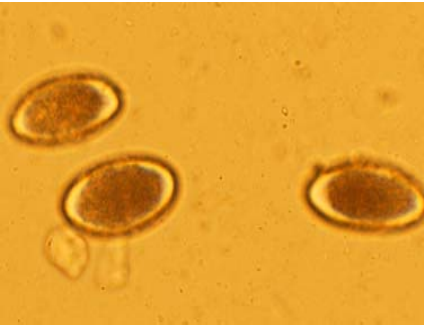
Worms in abomasum of sheep



Infective larvae eaten  
during grazing



Eggs in dung  
hatch in 24 hours



Infective larvae on grass  
4-7 days in summer!!



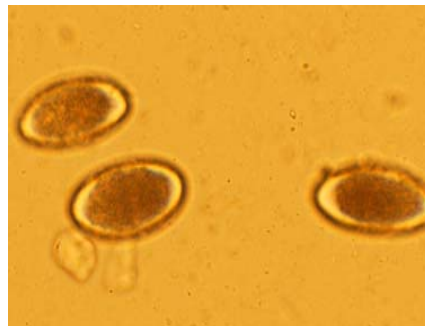
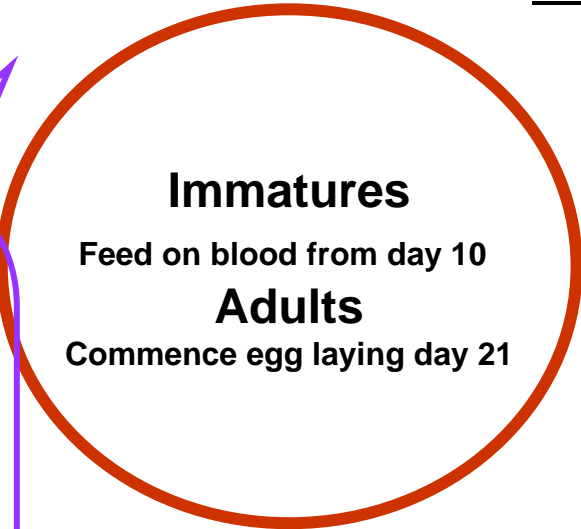
Rapid  
turnaround  
time-  
watering  
points

Worms in abomasum of sheep

Infective larvae eaten  
during grazing

Relentless  
and heavy  
reinfection

on a daily  
basis = spike  
infections



Eggs in dung  
hatch in 24 hours

Infective larvae on grass  
4-7 days in summer!!

# Signs & symptoms of infections...

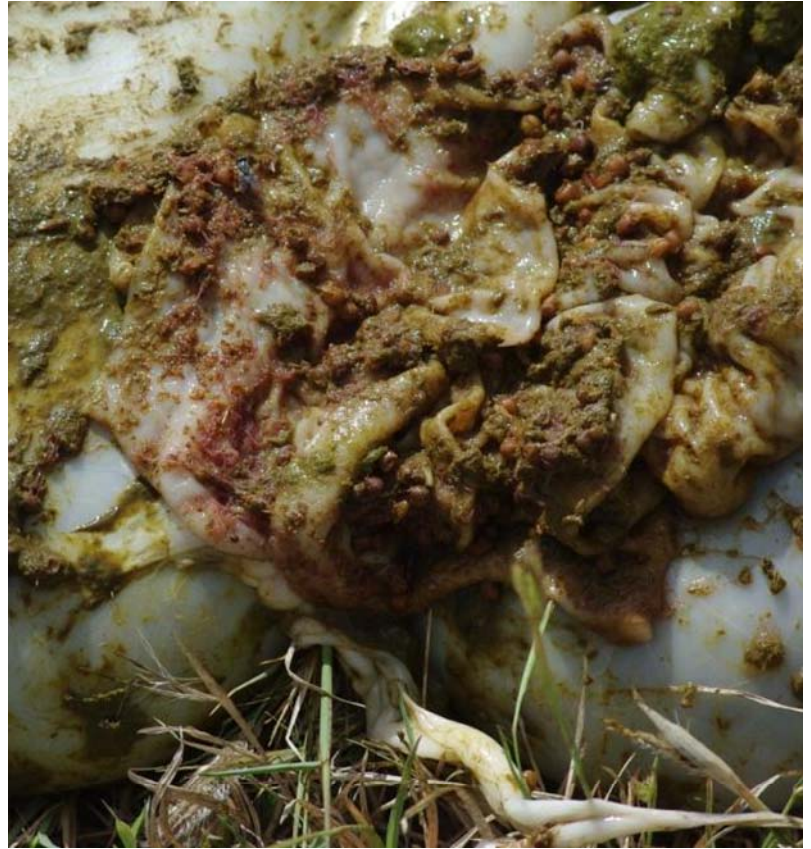
## Barber's pole

### Early infections – NONE

- Can you see this failure to gain weight infection across the paddock? 1kg

### Mature infections – severely affected sheep

- Spike infections Nov & Feb/Mar – lethargic, bottle jaw, inability to walk 100m and deaths of weaners & often mature sheep



Post mortem

# You may also notice...

## Spread of infections across the mob

- ❖ Not all sheep are equal - 80/20 rule
- ❖ By removing the tail of the mob the worm burden of the remaining animals is halved
- ❖ Breeding strategies for increased immunity to worms



# Early detection!

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- Once signs have appeared losses are inevitable

# Early Detection...

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- Visual – then guessing or testing
- Guessing – really popular
- Weather indicators + worm testing

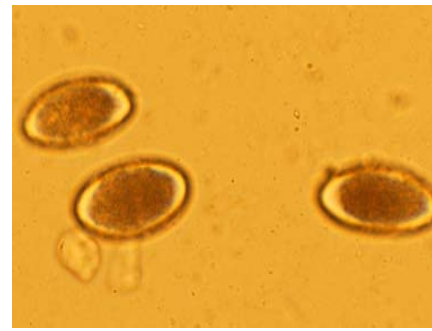
**EARLY DETECTION**

Worms in abomasum of sheep



Ewe  
is the source  
of infection & reinfection-  
across adverse seasons

Eggs in dung



Infective larvae on grass



Infective larvae eaten  
during grazing

Numbers of  
surviving larvae  
determine the level  
of reinfection

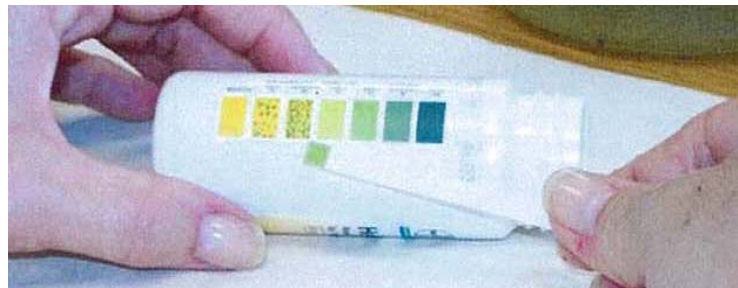


# Worm Testing...

**FACT:** about 7% of producers do a WormTest



WormTest  
All roundworm eggs in dung



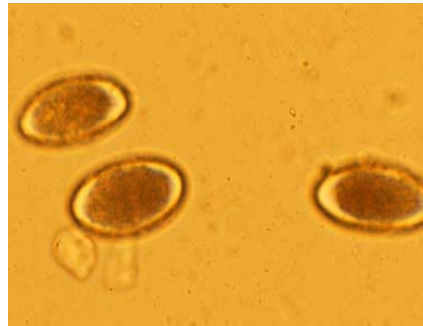
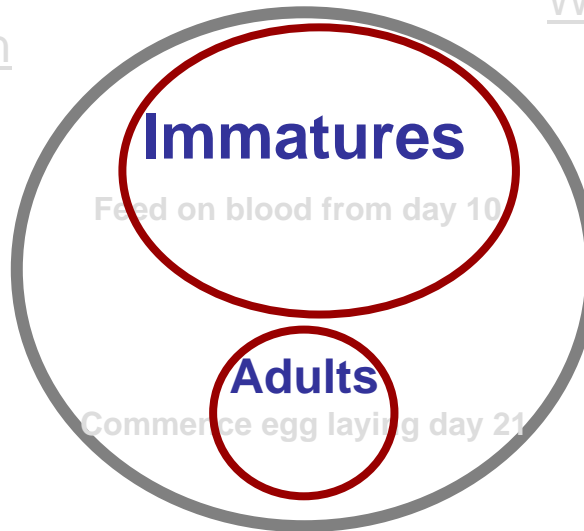
Dipstick  
Haemonchus only



FAMACHA<sup>©</sup>  
Haemonchus only

Infective larvae eaten during grazing

Worms in abomasum of sheep



Eggs in dung



Infective larvae on grass

# Early Detection...

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## When should you test?

- ✓ Spike infections – imperative

Prescriptive worm testing

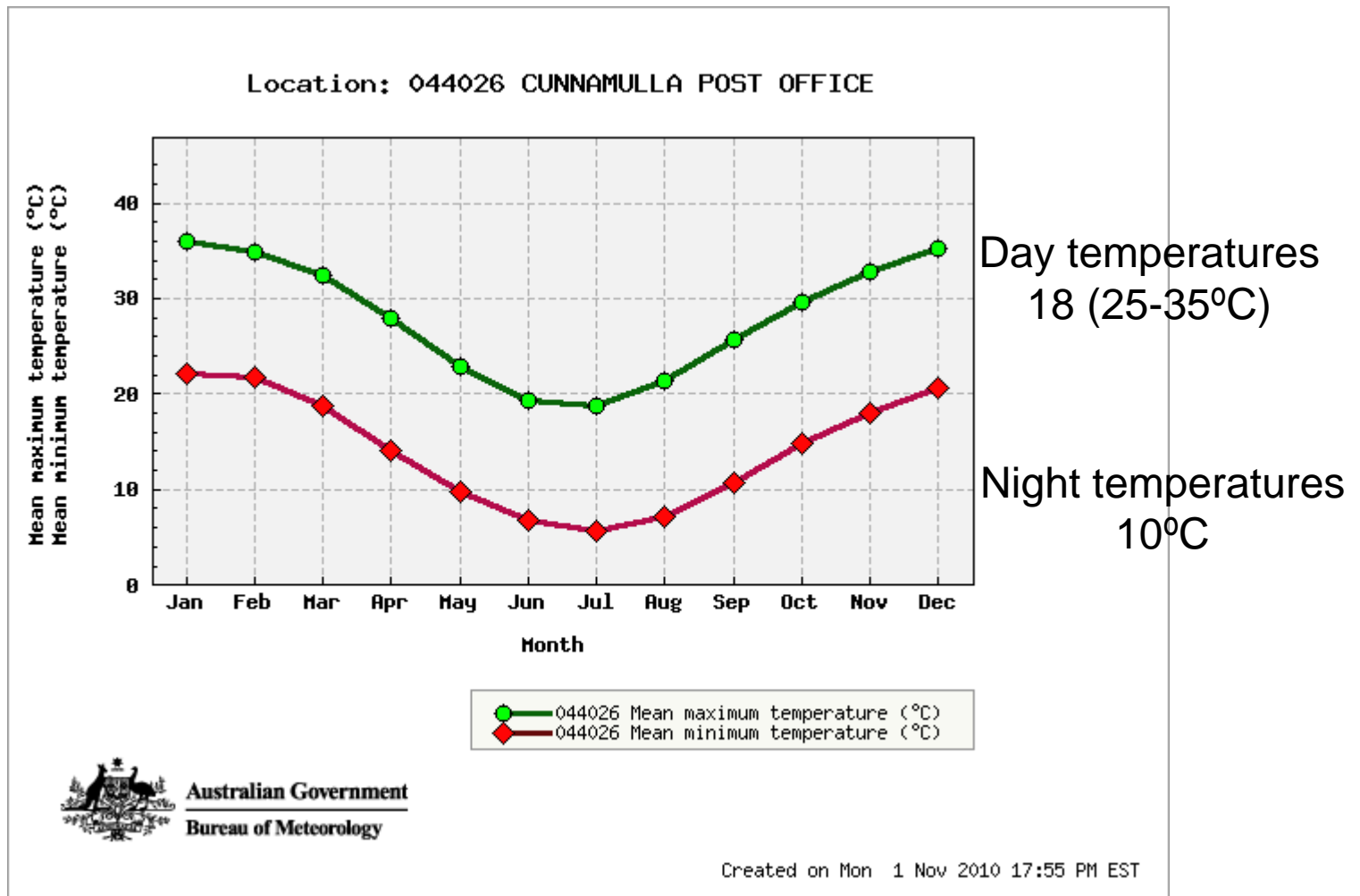
August + 8 weeks

Prelambing, lambing, marking, weaning &  
maybe mid-winter in wet season

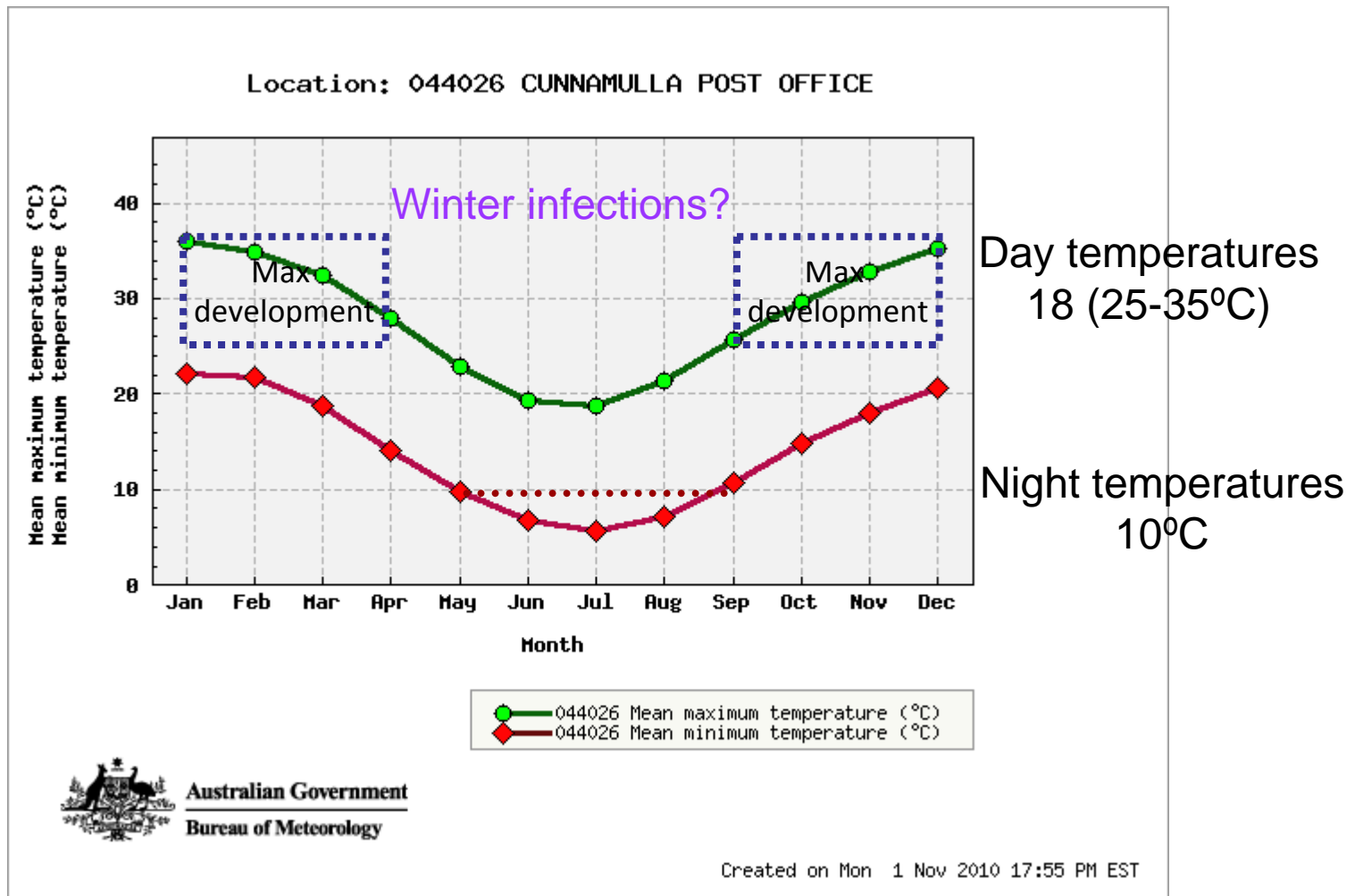
Add weather indicators to fine tune worm testing

- ✓ Grow weaners quickly
- ✓ Control infections over lambing
- ✓ Chronic low level infections during dry periods

# Worms by Weather

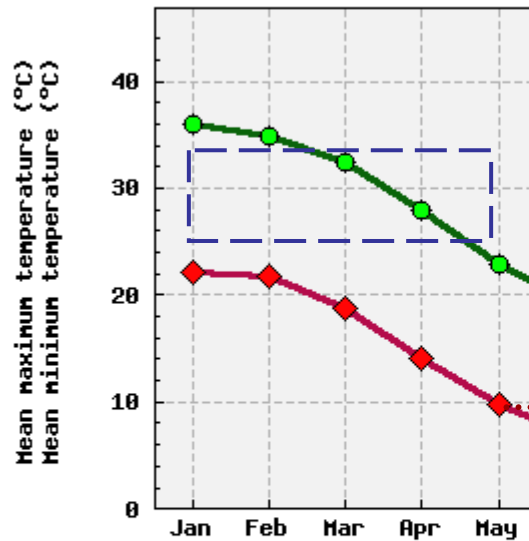


# Worms by Weather



# Worms by Weather

Location: 044026 CUNNAMULLA POST OFFICE



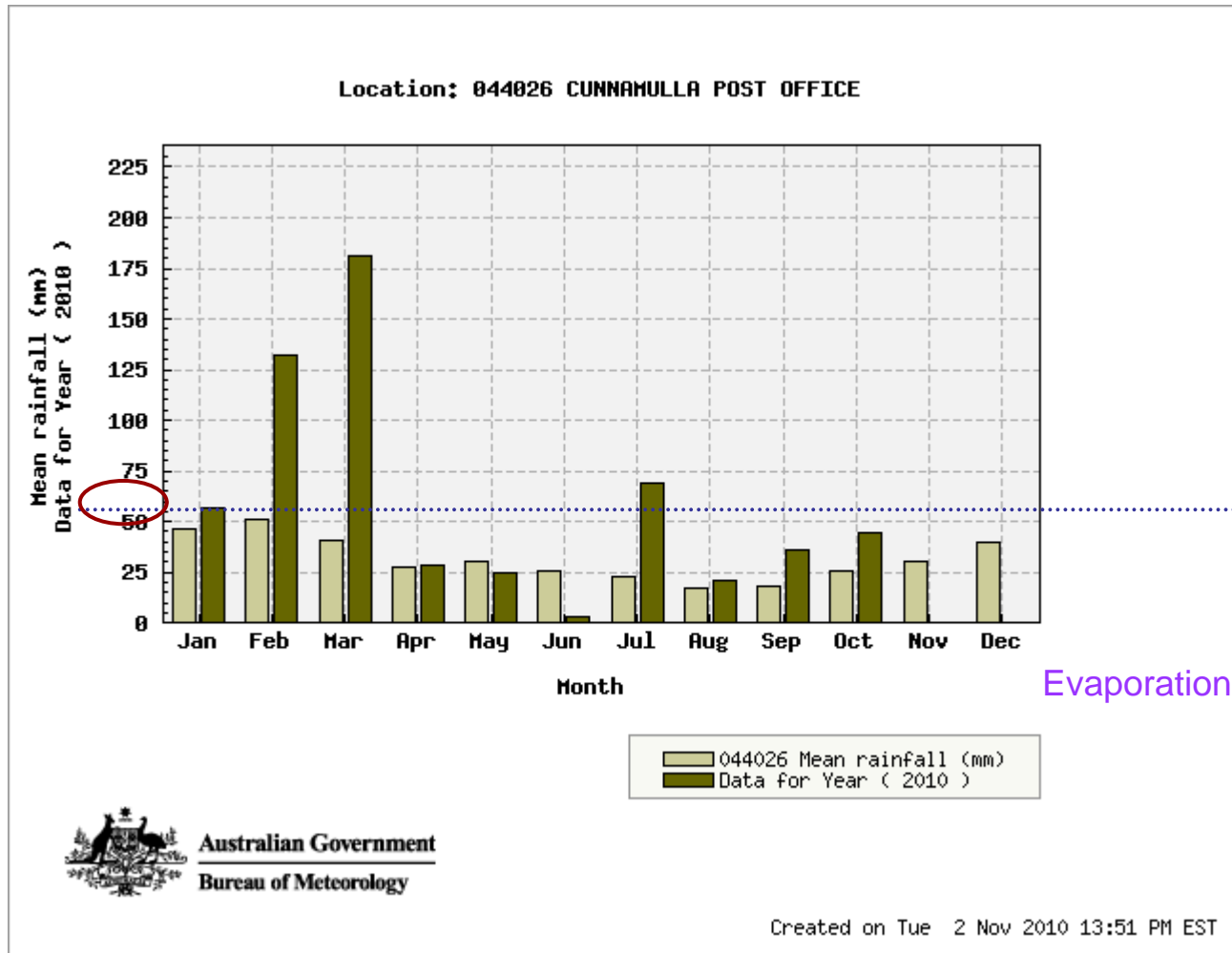
- Day temperatures high enough for transmission all year.
- Cooler winter temperatures slow the rate of development
- Temperatures greater than 25°C accelerate rate of development



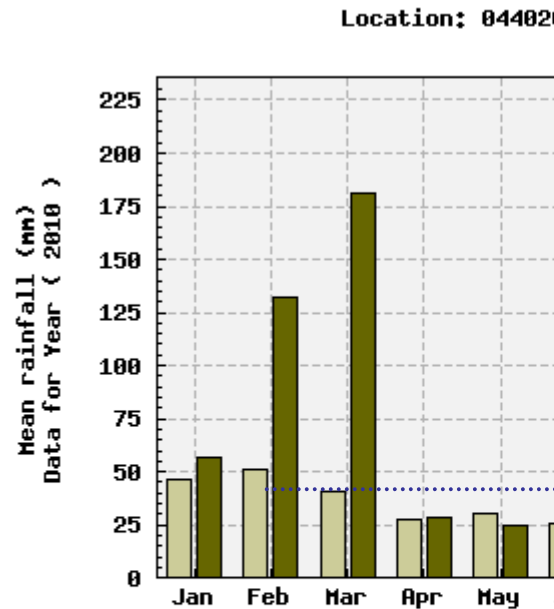
Australian Government  
Bureau of Meteorology

Created on Mon 1 Nov 2010 17:55 PM EST

# Worms by Weather



# Worms by Weather



- How much precipitation & evaporation

- 50mm after a dry spell or
- 15-25mm if soil moisture is high

- Pattern of precipitation & evaporation

- 5 days of showery & overcast weather or
- Green pasture providing moisture

- Hot dry wind

- No egg hatch or larval survival on those days



# Treatments...

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- Treat the host
  - Use drenches
- Host to contribute some immunity
  - Genetics & breeding values



Short-acting, multi-active drench  
Long acting drenches in wet seasons only & set-stock

# Would you drench?

Worm egg count epg	Immatures	Class	response
>500	<b>high</b>	weaners	drench & move
>500	low	wethers	drench & move /stay
300	<b>high</b>	wethers/ weaners	move / drench?
300	low	weaners	move /stay
0 (<40)	<b>high</b>	weaners	move

# Single-active drenches

These **single-active** ORAL drenches will control

these **SUSCEPTIBLE** worms

and are SOLD as

**BZ**

**LEV**

**ML**  
moxidectin  
abamectin  
ivermectin

# **MOX** is the most potent ML  
**iver** is the least potent ML

**MPL**

**OP**  
powder

**closantel**#

#extended action against  
susceptible barber's pole worm



barber's pole ✓  
black scour ✓  
nodule ✓

Panacur  
Alben  
Valbazen *etc*

Nilverm  
Big L  
Levamisole *etc*

Cydectin (**MOXIDECTIN**)  
Virbamec (**abamectin**)  
Ivomectin (**ivermectin**)

**ZOLVIX**



barber's pole ✓  
black scour ±

Rametin, Combat

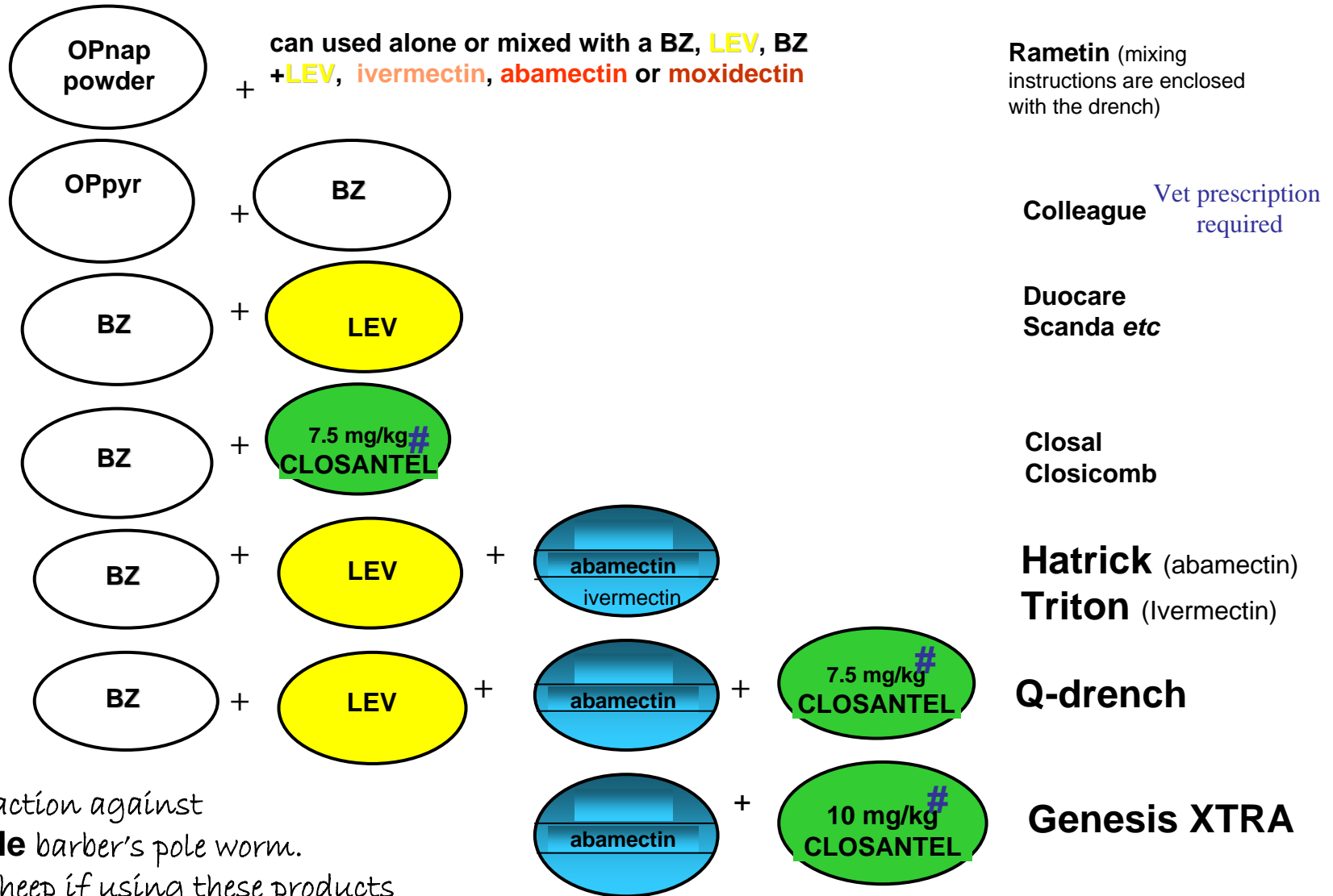
barber's pole ✓

Seponver, Sustain  
Closicare *etc*

# Multi-active drenches

These COMBINATIONS of single-active ORAL drenches

are SOLD as



#extended action against susceptible barber's pole worm.  
 Set-stock sheep if using these products

# Injections & Capsules

These drenches have **different treatment routes** and

are SOLD as

## Injections



Not less than **91 days** against moxidectin SUSCEPTIBLE barber's pole worm  
Up to **49 days** against moxidectin SUSCEPTIBLE black scour worm



Not less than **21 days** against moxidectin SUSCEPTIBLE barber's pole worm  
Not less than **7 days** against moxidectin SUSCEPTIBLE black scour worm

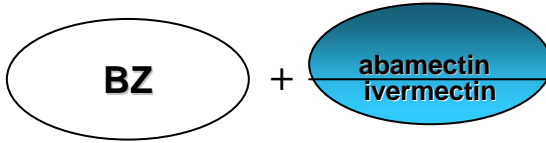
## Capsules



**100 days** against BZ SUSCEPTIBLE barber's pole worm  
**100 days** against BZ SUSCEPTIBLE black scour worm



**100 days** against ivermectin SUSCEPTIBLE barber's pole worm  
**100 days** against ivermectin SUSCEPTIBLE black scour worm



**100 days** against ivermectin SUSCEPTIBLE barber's pole worm  
**100 days** against ivermectin SUSCEPTIBLE black scour worm

## Cydetin LA

Cydetin EWEGUARD  
Cydetin WEANERGUARD

Extender JUNIOR  
Extender 100 ADULT

Ivomec MAXIMIZER  
WEANER & ADULT

Optamax (ivermectin)  
Bionic (abamectin)

# What next...

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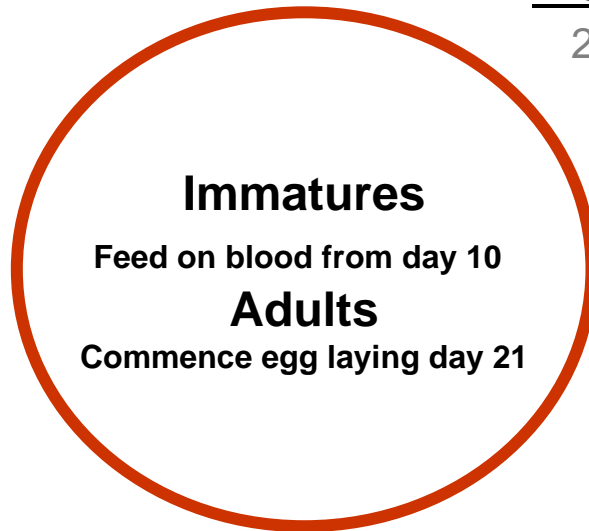
Under good conditions

- Sheep are wormy 4 weeks after a short acting drench

Reduce reinfection levels

- Host genetics
- ‘Starve the larvae’ on pasture

Infective larvae eaten  
during grazing



Worms in abomasum of sheep

21 days to egg laying

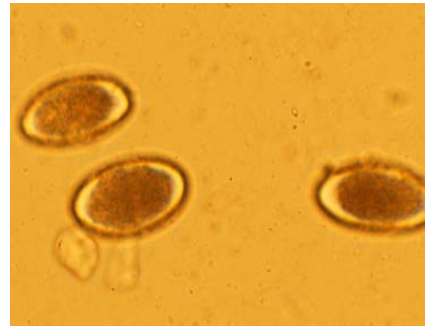


Eggs in dung

Die in 5 days



Infective larvae on grass



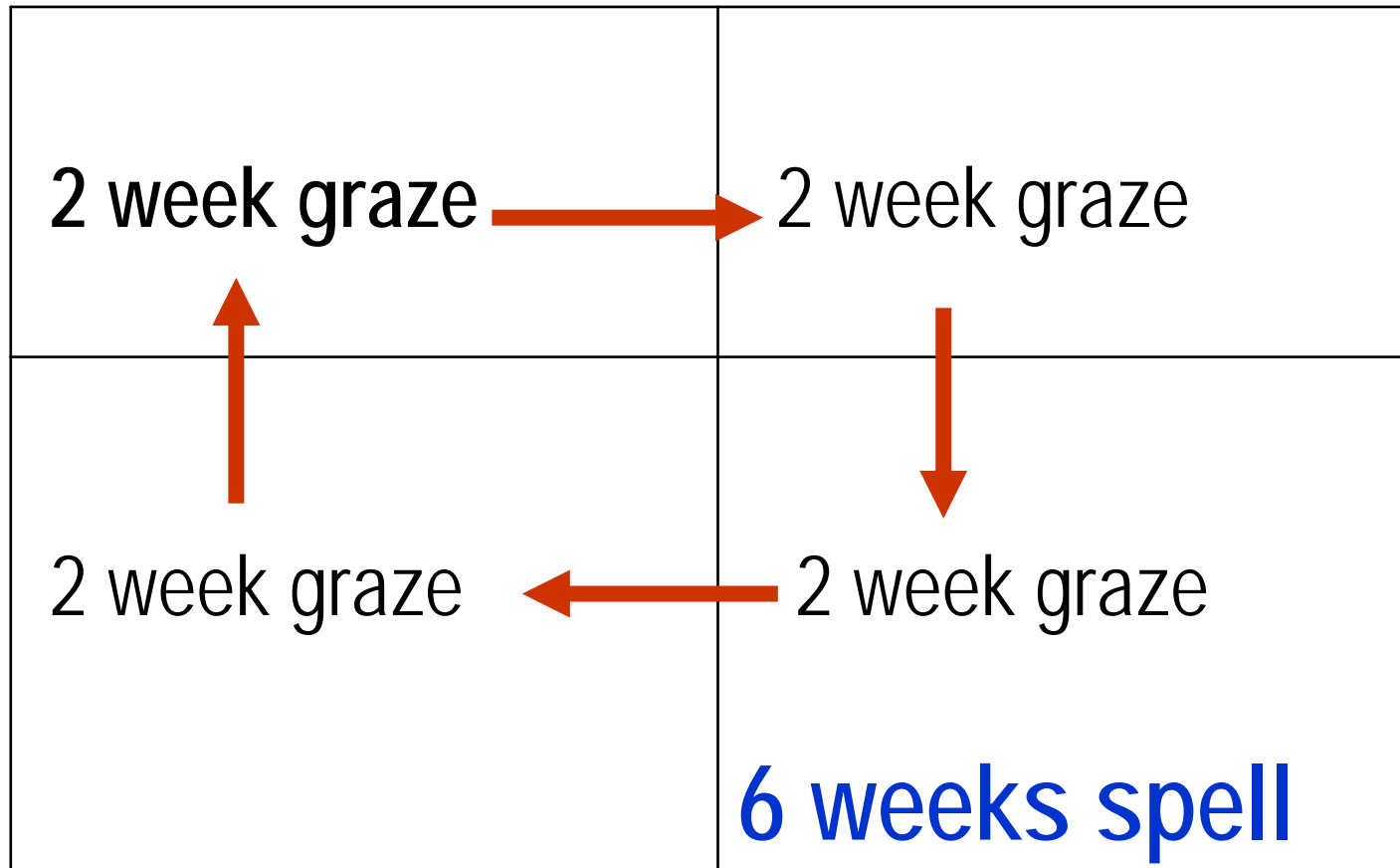
Die after 5-6 weeks of  
hot, moist conditions!!

Die within a few days of  
hot/ dry conditions

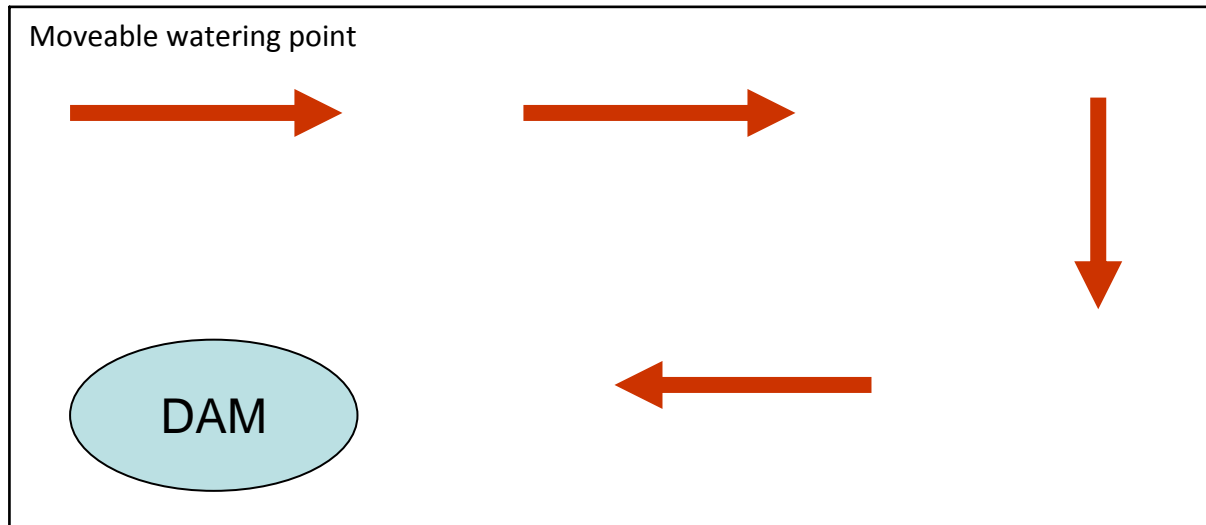
# For weaners - box & rotationally graze

November to March

Good for pastures & good for worm control



# Or perhaps this may be a better option?



Reduce grazing time to 7 days  
and increase number of paddocks or watering stops

# In summary

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## Don't guess worm test!

- August + 8 weeks OR
- Temperatures over 18°C [25-33°C] (day) and over 10°C (night)
- Rainfall 50mm (after dry spell & soil moisture low)  
or 4-5 days of showery & overcast weather (low evaporation rate)
- Greenness of grass

## Response

- Drench & move (wet summers)
  - followed by WormTest at day 10 (drench resistance)
- OR
- No drench & Move to fresh paddock

## Future

- Consider weaner rotation in wet summers
- Prepare paddocks for lambing