Emergency preparedness – PICs and Annual Returns

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Property Identification Codes (PICs)

- Improve traceability back to properties allowing a response to animal disease outbreaks, such as an emergency animal disease, a food safety incident, or an emergency (fires or floods)

- Who needs a PIC
  - Cattle
  - Sheep
  - Goats
  - Pigs
  - Deer
  - Bison
  - Buffalo
  - Alpacas
  - Llama
  - Horses
  - 100 or more poultry
  - 10 or more emus or ostriches
PICs

- Also important to domestic and international markets
  - Traceability of food products
- The first letter is N for New South Wales.
- The second letter is a check digit
- The next two numbers are for the LLS region
- The final four numbers make up your property number
- Unique to your property
  - If you move, the PIC stays with the property and you will need to apply for a PIC for your new property, or become the PIC manager for its current PIC

How to apply for a PIC

- Fill out a PIC application form
- Send to Braidwood office
  - enquiry.southeast@lls.nsw.gov.au
  - Mail: PO Box 97 Braidwood NSW 2622
- You will receive an invoice
  - $11 for ratepayers – one-time fee (above 10ha)
  - $22 per year for non-ratepayers (below 10ha)
- And an information package with your PIC
Annual Land and Stock Returns

• If you are a Local Land Services ratepayer (>10 hectares) or have a PIC you will receive a return
• Due by 31 August, all stock six months or older on the property as of 30 June
• Online
• By mail
  – Local Land Services
  Locked Bag 6013
  Orange NSW 2800

Critical information during an emergency (fires or floods)

Moving horses in NSW
Transported Stock Statement (TSS)

- Required when horses are travelling within NSW by vehicle
- Exceptions
  - Interstate, <30km in NSW
  - Veterinary treatment
  - To or from a show, exhibition, or other event
  - Transported for work
- Purchase TSSs from your local LLS office (Braidwood, Cooma, or Bega)

Worm control in horses
The worms

Roundworms (Ascarids)  Small Strongyles  Tapeworm

Large Strongyles  Pinworms


Parascaris equorum egg

Strongyle eggs

Small strongyles

- Cyathostomins or small red worms
- 40 species, adults in caecum and colon
- Acquired on pasture
- Migrate through intestinal mucosa
- Less disease compared to large strongyles
- Life cycle length – as short as 5-6 weeks
- Only produce diseases at very high burdens
- Emergence of larvae (L4) from gut wall – sudden weight loss, diarrhea, no eggs, highly fatal

Very common!
Roundworms

- *Parascaris equorum*
- Parasite #1 if you have foals
- Hardy eggs
- Acquired on pasture and in confinement
- Migrate through small intestines, blood vessels, liver, lungs, coughed up and swallowed
- Life cycle length – 10-12 weeks
- Coughing, colic, unthriftiness, slow growth, low energy

Tapeworms

- *Anoplocephala perfoliata*
- Mites are intermediate host
- Horse eats infected mite in spring, attach to mucosa and transform into adult
- Acquired on pasture
- Life cycle length – 6-10 weeks
- Live around the ileocecal junction – ileal impaction, spasmodic colic, intussusceptions
Large strongyles

- *Strongylus vulgaris*, *S. edentatus*, *S. equinus* – large red worms
- Adults in the large intestine, migrate outside intestine
- Life cycle length – 6-11 months
- *S. vulgaris* can cause thrombosis and inflammation of arteries during migration
- Clinical signs – weakness, emaciation, diarrhea, pale mucous membranes, colic (*S. vulgaris*)
- Low red blood cell counts

*Infection now very rare!*

Parasite refugia

- The portion of a population of parasites that escapes selection with the drug at the time of a treatment
  - Stages not affected by treatment
  - All free-living parasite stages on the pasture
  - All parasites in the animals that were not treated
- Dilute resistant worms
Other important concepts

• 20% of adult horses shed 80% of the eggs
  – This characteristic for a horse is very stable over time

• If you treat only those horses with a high egg count you leave more parasites in refugia
  – In one study, if you treat all horses with a strongyle worm egg count of 200 eggs per gram you only treat 50% of the horses but you still get a 95% reduction of the overall egg shedding

Goals of parasite control

• **Limit** parasite infection
  – Healthy horses
  – No clinical evidence of infection

• Minimize the risk of parasitic disease

• Control egg shedding

• Maintain effective anthelmintics

**NOT to eradicate infection**
Environmental control (strongyles)

- Clean up feces from paddocks
- Break up manure in summer
- Compost manure
- Hot weather – larvae survive a few weeks in hot weather, 6-9 months in cold weather
- Cross graze with another species (cattle, sheep) – worms are generally very host specific
- Cropping

Anthelmintics

- Piperazine – available in combination with oxfendazole
  - Adults, migrating large strongyle larvae
- Pyrantel pamoate and morantel
  - Only adults in the GI tract
- Benzimidazoles – oxfendazole, oxibendazole, fenbendazole, mebendazole
  - Adults, limited activity against larvae
  - Fenbendazole – encysted larvae but need repeat doses (5 days)
- Macro cyclic lactones – ivermectin, moxidectin, abamectin
  - Adults and larvae
  - Moxidectin – encysted small strongyle larvae and migrating larvae
- Praziquantel – only effective against tape worms
Resistance to anthelmentics

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<th>Pyrantel</th>
<th>Benzimidazoles</th>
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<tr>
<td>Small strongyles</td>
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<td>Round worms</td>
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<td>Large strongyles</td>
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- US data
- South-eastern states
- Piperazine is not licensed in the US

Testing for worms

- Kits available in Braidwood office
- No cost for kit
- Worm egg count = WEC
- 10 individual worm egg counts
- $58.27
Why do worm egg counts?

• Determine the shedding status of a horse at the time of sampling
• To determine whether parasite burdens in foals and weanlings are roundworms or strongyle
• To evaluate the effectiveness of an anthelmintic
  – Second WEC 14 days after treatment

Limitations of WECs

• Do not accurately reflect the number of adult worms in the horse
  – Unlike in sheep
• They do not detect the immature or larval stages
• Not good at detecting tapeworm infection
  – Intermittent shedding
What to do - foals

- 2-3 months – roundworm treatment (fendbendazole or oxibendazole)
- 6 months – WEC, treat depending on worm type (strongyle or roundworms), another WEC 14 days after treatment
- 9 months of age – treat for strongyles

Older horses

- Yearlings and two-year-olds
  - Younger animals shed more eggs
  - 2 years treatments, spring and fall, WEC in summer
  - In autumn, moxidectin or ivermectin plus praziquantel or (a double dose of) pyrantel
- Adults
  - In autumn, moxidectin or ivermectin plus praziquantel or (a double dose of) pyrantel
  - Selective therapy in the spring based on egg counts and repeat WEC 14 days after treatment
WEC – when to treat

• 0-200 EPG - no treatment
• 200-500 EPG - if stocking rate low and pasture/manure management consider not treating and recheck but if no management then consider treatment
• >500 EPG - treat

Final considerations

• Do not under dose – use weight tapes or scales
• If you see a horse with signs of disease TREAT regardless of time of year
  – If signs of intestinal parasitic disease use moxidectin
• In other species, combinations delay onset of resistance – the best choice for horses?
• New introductions – quarantine, deworm and WEC prior to mixing with resident horses