

WHAT THE FEC??

Lessons learned from initiating extension within Australia's horse industry about increasing worm resistance to chemical anthelmintics:

- Success
- Failure
- And bits in between



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Quals and Things

Diploma in Horse Husbandry, Post Graduate Certificate in Parasitology, Master of Animal Science (Candidate), Charles Sturt University. Member APEN (4 years), Australian Horse Industry Council (AHIC), Australian Society for Parasitology (ASP)



Evidence Based Worming ®

Mission Statement - *to facilitate change within Australia's horse industry to move from routine worm treatment of horses to only treating them based on the evidence from Faecal Egg Counts (FECs)*

RESISTANCE

Horse poo can contain parasite eggs like this one below. The FEC test involves using a McMaster slide and a microscope to count how many eggs there are in 1 gram of poo. Such fun!



- The greatest single challenge facing horse owners the world over is increasing worm resistance to our current stock of chemical anthelmintics – pretty much like antibiotics resistance. This can NEVER be reversed and there are no new anthelmintics in the R & D pipeline.
- Faecal egg counts (FECs) can provide EVIDENCE as a basis for -
 - determining which horses to treat (the ones with the most eggs), leading to
 - a more judicious use of anthelmintics, and (hopefully)
 - slowing the march of resistance in its tracks or, ideally, stopping it altogether.
- 5 years ago I set out to spread the word within Australia's horse industry.

This is how it went

EXTENSION IN THE HORSE INDUSTRY

THE TASK:

To raise awareness within Australia's horse industry about increasing parasitic worm resistance to chemical anthelmintics and, based on the current science, build capacity of horse owners to slow/stop its advance by learning to do FECs for their own horses.



THE STRATEGY

PROPOSED EXTENSION MODELS:

- Group facilitation / empowerment
- Training
- Information access
- Mentorship

THE TARGET GROUP:

- The influencers – people responsible for large numbers of horses eg, managers of horse agistment facilities and horse studs

ROLLING IT OUT:

- Presentations (speaking gigs)
- Group facilitation through workshops
- Demonstrations of the FEC testing process
- Free resources
- Social media and mentorship

SO, HOW DID IT GO?

1. PRESENTATIONS



SO, HOW DID IT GO?

1. PRESENTATIONS - Take 2



LESSON: NEVER let your ego take charge!

SO, HOW DID IT GO?

2. WORKSHOPS AND GROUP FACILITATION - training the influencers

Lessons learnt:

- greater engagement with individuals than my previously defined influencers, possibly because they are more invested in their own horses' FEC counts than spreading the message about increasing worm resistance
- local area saturation is rapid
- logistical challenges in delivering face-to-face when you move beyond your region. I received requests to conduct workshops from all over Australia which were not able to be accommodated. This ultimately led to a significant change in extension delivery model – a DIY manual

SO, HOW DID IT GO?

4. DEMONSTRATIONS – taking extension on a road trip

Lesson:

- less is more – traveling to events with less equipment proved a more effective extension option – interactive with props, free handouts and prizes = a winning formula

5. FREE, DOWNLOADABLE ON-LINE RESOURCES – to provide easy access to resources that have been used in workshops and demonstrations

Lesson:

- providing relevant back-up resources essential for keeping new adopters of FEC technology engaged and supported

6. SOCIAL MEDIA AND MENTORSHIP – (phone, email, website, Facebook, Mail Chimp, LinkedIn, Twitter, YouTube)

Lessons:

- respond to queries promptly and effectively – a positive stakeholder experience is essential
- you can't overdo social media – when you slow down, extension slows down

EPIC SUCCESS CAN ARRIVE WHEN YOU LEAST EXPECT IT

22,000 reach in a few hours – and it didn't stop there

Now close to 100,000 reach (including shares and engagements) both in Australia and overseas

Best Practice in Environmental Strongyle Worm Management A Seasonal Guide for Horse Managers

Relevant for healthy, adult horses from the age of 3 years

Gear up for SPRING

With an increase in temperature and good moisture, pasture grass will grow quickly. These are the best conditions for Strongyles to begin laying eggs. So, about a month into Spring...

- undertake a faecal egg count (FEC) for each horse and record these measurements for your future reference
 - **LOW (0 – 100 EPG)** – No treatment necessary.
 - **MODERATE (> 100 <200 EPG)** – No treatment, FEC monitor in 4-6 weeks or after warm, moist weather.
 - **MODERATE-HIGH (>200 <500 EPG)** – treatment advisable, monitor with additional FEC at end of efficacy period (according to manufacturer's statement).
 - **HIGH (>500 EPG)** – High-egg shedder. Treatment necessary. Continue to monitor these horses.
- **always treat HIGH egg-shedding horses with a targeted treatment (read the label) and monitor with FECs.**

Exercise restraint in SUMMER

In summer, *non-resistant* worms will try to survive hot, dry pasture conditions so only use deworming chemicals at this time if absolutely necessary. We need these worms to help keep the population of *resistant* worms at low levels.

- continue to monitor high egg-shedding horses with FECs every 8 weeks or so, but **BEFORE** any treatment (otherwise the result might be false)
- About 4-6 weeks after significant summer rain, it is useful to undertake FECs for all horses (keep an eye on the grass – is it growing?)

Treat other parasites in (late) AUTUMN

In late autumn the weather is cooling off and is less attractive for Strongyles to be laying eggs. But this is the best time to treat horses for other parasites such as bot fly larvae and tapeworm. Treatment at this time is also the time where there is minimal impact on our precious dung beetles.

- use a product with *Praziquantel* for treatment of tapeworm. Dewormers often identify this ingredient by using 'Plus' in the label. Ivermectin/abamectin will target bots.
- continue to monitor and treat high egg-shedding horses.

**HORSES THAT HAVE A TRACK RECORD OF NO, OR LOW EGG TEST RESULTS
GENERALLY ONLY NEED DEWORMING ONCE A YEAR – THIS IS THE TIME TO DO IT!**

Have a break in WINTER

In most parts of Australia, the weather cools sufficiently for this to be a time of low Strongyle egg production, but our winters are seldom cold enough or long enough to seriously deplete eggs that winter-over in the pasture. The main job at this time is to

- treat for bots and tapeworm if you didn't get around to doing this in late autumn

OTHER TIPS...

Become a **Worm Weather Tragic**:

- When the grass is growing, the worms will be laying eggs so, after warm, moist conditions (yes, these can even occur in winter) be FEC-vigilant!
- In the tropics – your FEC-ing regime will be governed by the wet and dry seasons,

AND, MOST IMPORTANTLY: always integrate FECs with good pasture hygiene/horse husbandry strategies.



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EVOLUTION OF ORIGINAL EXTENSION STRATEGY

- Speaking gigs
 - Modified – less TED, more research = more targeted
- Workshops
 - Replaced with a DIY workshop manual – *'Count Your Eggs Before They Hatch'*
- Demonstrations to horse managers
 - Extended to include livestock owners, schools, pony clubs, special interest groups, eg RDA
- On-line resources
 - Maintained and enhanced
- Social media platforms
 - Maintained and enhanced

IS IT WORKING?

INDICATOR	MEASURE
Stakeholders	Significant increase in engagement through my various social media ('likes', subscriptions, posts, shares, email contact, etc. confirmed by data analytics).
Invitations	Increase in number of requests to submit content for horse-related magazines, to participate in podcasts and present demonstrations.
Copycat businesses	Emergence of similar business models – ? validation that others think I am on the right track.
Anthelmintic use	The cost of anthelmintics for horses is dropping – a possible interpretation is that FEC testing is beginning to impact this market.
Sales of McMaster slides increasing	Apart from individual purchases from horse owners and veterinarians, there is strong evidence that the FEC test procedure is increasingly being taught at schools, TAFEs and universities in their agriculture courses.

KEY LESSONS

- **The influencers** - they did not turn out to be the managers of large groups of horses, they are the everyday horse person, their peer groups and governing bodies who regarded the message about increasing parasitic worm resistance to anthelmintics important enough to share through the various social media.
- **The extension process is never static** – whether you encounter success or failure, these experiences must be viewed as opportunities to continually fine-tune your extension approach in order to take your stakeholders with you.



Thank you! Any questions?



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