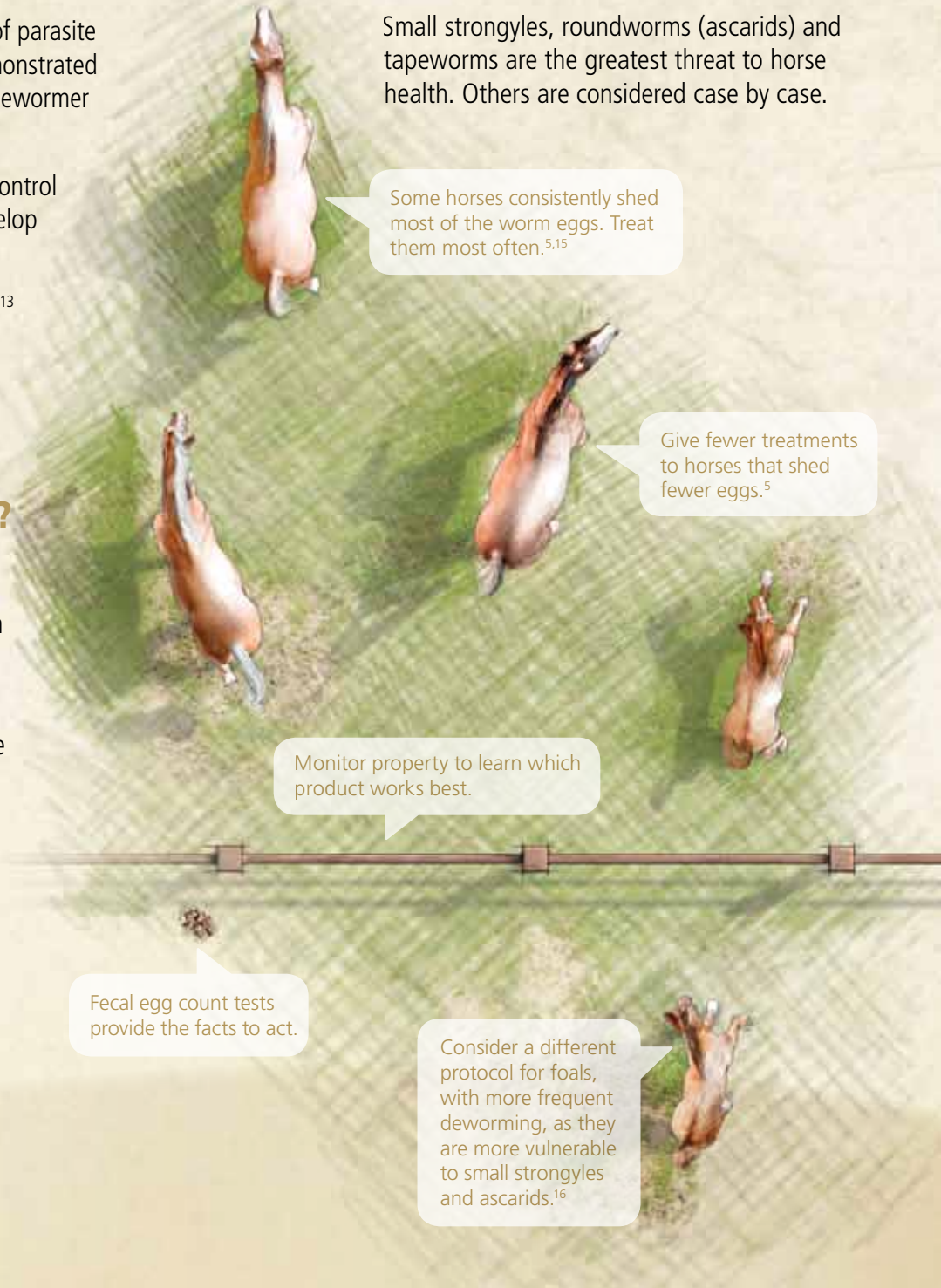
YOUR HORSE CAN BE HURT BY PARASITE RESISTANCE TO DEWORMERS.

1 Why is resistance a concern?

- Small strongyles — the major target of parasite control in mature horses — have demonstrated resistance to two of the three major dewormer classes.[1-4]
- While products in the third class still control small strongyles, resistance could develop from overuse. [1,5,6-11]
- Rotation has not slowed resistance.[1,12,13]

2 Which parasites should we care about?

Small strongyles, roundworms (ascarids) and tapeworms are the greatest threat to horse health. Others are considered case by case.



3 What can we do to protect your horse?

- Use fecal egg count reduction tests to monitor product efficacy and worm burden by horse. [7,13-15]
- Implement a strategic deworming program that does not try to eliminate *all* worms by treating *all* horses *all* the time.[13,15]
- Slow further resistance by selectively treating horses with products that still work well.[5,14]

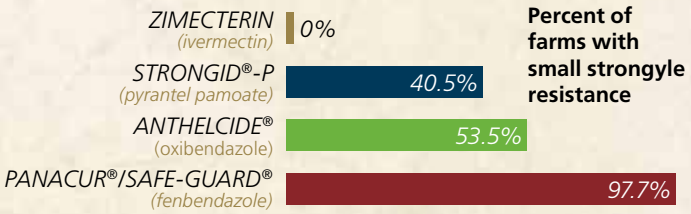
RESOURCES ON PARASITE RESISTANCE TO DEWORMERS.

Chemical classes of common equine dewormers.

Chemical Class/Active Ingredients	Common Product Names
Benzimidazoles: Fenbendazole; Oxfendazole	SAFE-GUARD® PANACUR® ANTHELCIDE®
Tetrahydropyrimidines: Pyrantel pamoate; Pyrantel tartrate	STRONGID® products ROTECTIN P®
Macrocyclic lactones: Ivermectin; Moxidectin (Avermectin)	ZIMECTERIN® Gold* ZIMECTERIN QUEST® Plus* QUEST EQUIMAX®*

*These products also include praziquantel, an active ingredient that specifically controls tapeworms (*Anoplocephala perfoliata*).

Results of a study documenting resistance.[1]



Based on the largest survey of equine dewormer resistance reported to date. Forty-four farms/stables in five states.[1]

Small strongyle

Roundworm

Tapeworm

Strategic deworming programs focus on:

Small strongyles …

- Can cause mild colic (may be chronic), weight loss, diarrhea, loss of appetite, poor coat condition and intestinal ulcers[17]
- Virtually all grazing horses are infected[13]
- Horses never develop total immunity[13]
- Well-documented resistance to benzimidazole and pyrantel products[1-4]

Roundworms (ascarids) …

- The greatest concern for horses under 6 months of age[16]
- Healthy older horses have immunity, but can still shed eggs
- Adults cluster in the small intestine causing impaction, often with colic, that can result in a ruptured gut and death[16]

And tapeworms.

- Virtually all grazing horses are at risk
- Contribute to colic by causing inflammation, ulceration and bowel obstruction

ZIMECTERIN® Gold (ivermectin/praziquantel) controls more species and stages of parasites than any other product.[18,19]

- Effective against small strongyles resistant to benzimidazole products[18]
- More than 99 percent effective against natural tapeworm infections (*Anoplocephala perfoliata*)[19]
- Approved for use in adult horses and foals as young as 2 months old[18]
- 100% Product Satisfaction Guarantee

THE ZIMECTERIN GUARANTEE

Warning: Not for use in humans. Keep this and all drugs out of reach of children. *In horses there have been rare reports of swelling and irritation of the mouth, lips and tongue following administration of ZIMECTERIN Gold. These reactions have been transitory in nature. Do not use in other animal species as severe adverse reactions, including fatalities in dogs, may result.*

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[13] Reinemeyer CR. Rational approaches to equine parasite control. *Equine Parasite Control* Kentucky Equine Research, Inc. 64-72.

[14] Kaplan R. Recommendation for standardization of fecal egg count reduction tests in cattle. *AAVP* 2007. Washington, D.C. Abstract 78:84-85.

[15] Kaplan RM. These ain't your father's parasites: An evidence-based medical approach to equine parasite control. *The Practitioner* October 2008.

[16] Clayton HM. Ascarids: recent advances. In: *The Veterinary Clinics of North America: Equine Practice.* Philadelphia, Pa.; 1986;2(2):313-328.

[17] *Merck Veterinary Manual*, Ninth edition, 2005:268-269.

[18] Based on data provided on the ZIMECTERIN Gold product label.

[19] Based on data provided in FDA Freedom of Information summaries.

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