

This information was generated by Gold Director Rowan Emrys, C.N.M.T., an independent distributor for DYNAMITE[®] Specialty Products. The views expressed herein do not necessarily reflect those of DYNAMITE[®] MARKETING, Inc. No claims are expressed or implied, and this information is not intended to diagnose, prescribe or cure.

We saw a TV show about wild horses a while back. One of the segments described a stallion who was emaciated apparently from parasite infestation. The next scene, shot some months later, showed the same stallion but once again robust, shiny and healthy. How in the world did this horse regain total health without the benefit of modern chemical deworming products? He ate herbs!

So let's take a look at some modern deworming practices, concerns with them and possible options.

Signs of Parasites or Liver Toxicity

First of all, does your horse even *have* a parasite overload? Just being thin does not necessarily indicate this and far too many horses are made seriously, if not fatally, ill by intense, automatic deworming. Interestingly, the signs people look for to suggest parasite infestation are the *very same* that indicate liver toxicity. This can be caused by chemical overworming among other possibilities such as overvaccination, overload of indigestible or unbalanced nutrients, ingestion of mold inhibitors, pesticides, etc.

Dr. Donna Starita, a Washington holistic DVM, says "*Chemical wormers are accumulated and processed in the liver. When the liver becomes overwhelmed, it moves out of first stage storage and detox and into second stage, the byproducts of which are metabolites which are toxic to the cells. Now the animal is coping with the parasite, the toxic effects of the wormer, the health issues which precipitated the original health crisis that allowed the parasite to overgrow in the first place, plus the second stage liver metabolites. The overall result is a progressively downward spiral into increased toxicity, increased numbers of resistant parasites, and increasingly more serious health problems.*"

Some signs of **both** parasites **and** toxins include:

1. Recurrent colics (especially right after deworming) or digestive distress, loose stools.
 2. Weight loss, topline loss or muscle wasting.
 3. Hypothyroidism as evidenced by weight loss or gain, crumbling hooves, laminitis, dry hair coat, frizzed hair coat, reproductive problems.
 4. Hoof abscesses or white line disease.
 5. Crabby attitude or lack of desire to work or play.
 6. Muscle soreness, tying up or white, foamy sweat.
- A hooked hair coat is a *unique* sign for parasite overload.

Parasite Resistance

Despite the fact that Ivermectin was originally introduced as a "resistance-free" dewormer, in *Equus*, May 2003, an article showed that parasites are becoming resistant to various wormers, including Ivermectin, and recommend always performing a fecal rather than de-

worming by rote. They suggest deworming *only* if a positive fecal count is over 100; if a fecal is negative, do not worm.

Another study recently appeared in *Veterinary Record*, the most prestigious research magazine for vets. With a test base of 24+ horses and 44 horse properties being checked, **all** had *benzimidazole* resistance, and 48% had *pyrantel* resistance; the latter was presumed to be due to the use of daily wormer. Dr. Ray Kaplan and his colleagues stated: "*Development of an effective immune response is important to ameliorating disease.*"

They agreed that fecal egg counts were the most useful guide to the need for treatment. The figure of **200** eggs per gram was given as the threshold to begin treatment with deworming drugs. **They made clear that treatment should be based on the egg counts of individual horses, and not on regular periodic dosing.** It was suggested that horses with fewer than 50 eggs per gram be ignored as sources of potential contamination. The study concluded that regular use of *moxidectin* (Quest) **increased** the risk of resistance to this class of drugs, and that its use should be limited.

They concluded: "*It is vital for horse health to maintain the efficacy of anthelmintics, particularly the macrocyclic lactones (ivermectin, abamectin and moxidectin). To do this will require a major change in thinking about the way anthelmintics are used - from preplanned treatments to treating only those horses that require treatment and reserving larvicidal drugs for those animals where large numbers of larvae are likely to be present in the mucosa.*"

Resistance to the *macrocyclic lactones*, or ivermectin-type wormers (Ivercare, Zimecterin, Quest, Rotectin 1, etc.), is also being reported. *Horse Journal* in November 2003 states, "*The Journal of the American Veterinary Medical Assn reports the failure of ivermectin to eliminate roundworm infestation in 20 out of 37 foals treated with ivermectin. In some foals, the counts kept increasing between the time of treatment and a recheck 12 to 13 days later... The ivermectin failures occurred mostly in foals that had been born on the farm and were regularly dewormed with ivermectin since birth, both suggesting the emergence of an ivermectin-resistant roundworm on this farm. ...intensive use of ivermectin puts considerable pressure on the parasites to evolve to a resistant form.*"

The article suggests deworming **only** high risk horses or those with high egg counts (**over 200** eggs per gram), and skipping the other horses so that there are parasites present to interbreed with the resistant strains, thus lowering the possibility of totally resistant parasites.

Chemical Safety

As for the chemical wormers themselves, ever since hearing that all the “-mectins” and the Quest line are banned in Europe because of neurological side-effects, we ourselves stopped using our annual Ivermectin use for occasional use of only Safequard when absolutely necessary. The rest of the time we depend on optimum **DYNAMITE** nutrition and **Herbal Tonic**.

Moxidectin (Quest) and Ivermectin are neurotransmitter inhibitors; that is, they work on the nervous system of the parasite, paralyzing it rather than killing it. Unfortunately, they also affect some mammals similarly with ataxia (stumbling gait) even though they are not supposed to be able to do this because of physiological differentiation. If you think these medications are utterly benign, just read the label warnings on every box. In fact, according to the FDA, Moxidectin is the second-most frequently reported drug in adverse-event reports for *all* species, and *all* drugs, coming in second only to Rimadyl, the dog anti-arthritis medication.

We ourselves have seen otherwise seemingly healthy horses “fall apart” within two weeks or so of being dewormed with Ivermectin or Quest such as coats and eyes going dull and hooves becoming “rotten.” At most risk for this are youngsters and geriatrics and those horses which are vaccinated at the same time worming takes place. We also question the possible correlation of these wormers with cyclical manifestations of *uveitis* or moon-blindness; anecdotally, far too many rounds of this disease seem to follow closely on the heels of deworming with such products [*EQUINEFAQ:UVEITIS*].

Another danger of these wormers is with horses who have ulcers. In such cases, the neurotoxic chemical can easily penetrate the GI tract going directly into the bloodstream and causing severe reactions, even death. Since highly campaigned and competitive horses are among those with ulcers, this is an all too frequently overlooked serious concern.

The other classes of wormers also present side-effects not as overtly serious as the neurotransmitter inhibitors. In fact the greatest “side-effect” of the pyrantel class (Strongid, including daily) was that it did not work. [*EQUINEFAQ:IVERMECTIN*]

. . . and Chemical Effects on the Soil

Because what goes in, generally comes out in one form or another, horse farms where chemical dewormers, especially the *macrocyclic lactones*, have been used for decades, are going to be devoid of the microbial activity needed to grow healthy forage. Such toxic soil can even be leaching the chemicals into your horses. We heard of one case where a horse immediately became ataxic, stumbling about, when put into a run where the previous tenant had been wormed every three months with harsh chemicals.

Doing Fecals

The general consensus from the experts is to perform fe-

cals before automatically deworming any horse and to only deworm if the count is over 200. It is possible to mail-order kits which contain excellent instructions including fecal egg charts for all ruminants and horses/dogs/cats, plus slides, solutions, etc. Microscopes are available separately: Farmstead Health Supply of North Carolina, 919-643-0300/WWW.FARMSTEADHEALTH.COM/MICROSCOPE.HTML.

Always bear in mind, however, that a single fecal sample is like a snapshot: hours before and after can be quite different. You can do a fecal on the same horse in the morning and afternoon of the same day with very different results.

CHANGING THE PARADIGM

Rather than thinking of parasites as nasty creatures that need to be killed, perhaps we should start looking at the reasons why they are present. In fact they are actually a symptom of disease states.

The Role of Nutrition and the Immune System

We have found that unthrifty horses, or those prone to parasites, usually are suffering from toxicity, under-nutrition, various deficiencies or all three. Healthy animals, those well nourished with an abundance of minerals, seem to simply not attract parasites in the first place.

Donna Starita, D.V.M. concurs: “*A healthy animal in a state of homeostasis does not develop a parasitic overload. It develops and maintains a symbiotic relationship with the parasites in its bowel, at a level that stimulates a natural immunity to the parasite without overwhelming the host. This is assuming the animal is healthy. In an unbalanced state, the parasite numbers may climb, sometimes dangerously, but in many cases the cure is more harmful than the disease.*”

This long quote from *The Rest of the Story About Agriculture Today* expresses a similar viewpoint:

“Just as good health and vigor protects plants from their pests and diseases, so also are animals (and humans) protected from parasites and diseases. Are infectious diseases caused by germs? Well, yes, but . . . we are surrounded by disease germs daily, but as long as we are in good health - get plenty of sleep and eat a good diet - we don't get sick. Usually, it is only when an animal is under stress - in poor health - that disease pathogens can get a foothold. Healthy animals have various defenses against parasites and diseases, including antibodies and white blood cells. It is well known among animal breeders and geneticists that the offspring of certain crossings are resistant to insects and diseases (J. Blakely & D.H. Blade, The Science of Animal Husbandry, 1976, p. 129.)

Organic farmers often report that their livestock are not bothered by flies. Veterinarian Dr. John Whittaker, writing in Acres U. S. A., (Dec. 1975, March & April 1975), states that B vitamins, vitamin C, and other nutritional factors play an im-

portant role in protecting animals from parasites and diseases; for example, an imbalance of dietary calcium and phosphorus or a magnesium deficiency increases parasitic worm infestations, while a high carbohydrate diet increases the infection of *Balantidium*, a protozoan intestinal parasite. He notes that too much soluble nitrogen (non-protein nitrogen) or urea in feed causes high blood urea or ammonia levels, leading to reduced resistance to bacterial infections. Resistance to parasites and diseases can also be lowered by vaccinations and antibiotics (these can kill rumen microbes, leading to toxic mold infections), worming medicines, moldy feeds (through mold-produced toxins, including aflatoxin), and stresses (weather, noise, moving, and diet changes).

The basic approach of the experts to weeds, insects and diseases is to identify the pest involved and zap it with the recommended poison. But actually, pest attack is a symptom of plant and animal deficiencies and malnutrition, not the cause of the illness."

And Dr. Starita says she sees more cases of colic and *verminous arteritis* in her practice in horses that are wormed daily or semi-monthly than in horses that are not wormed as frequently.

Additionally, researchers at Albion laboratories observed that **animals with copper deficiency are more prone to parasite infestation** and an Acres USA article stated that animals with **darker coat pigment require more copper** than animals with lighter hair coat color. Copper is not only one of the main trace minerals that powers the production of the immune stimulating enzyme *superoxide dismutase* but it is also a major nutrient support, along with vitamin C, for blood vessel strength and integrity. It seems to make a certain amount of sense, then, that animals deficient in copper would be more prone to parasite induced tissue damage including blood vessel aneurysms.

Interestingly, many old time cattlemen and horsemen recognized parasite infested animals by the "fading" of the coat color intensity, another sign of copper deficiency in all mammals including dogs and humans. Bays and chestnuts will be "washy" and lighter-colored than normal; blacks such as Angus cattle and Doberman or Rottweiler dogs will have a definite reddish cast; Herefords will be yellowish. Frequently hair will "fishhook," curling up at the ends, as well.

Hopefully, parasitologists and other researchers will begin looking further afield for answers other than the common "kill 'em" mentality. There certainly seems to be enough evidence already that indicates reasons for animals to attract parasites and ways in which to deal with them effectively other than strictly toxic chemicals.

Consider Alternatives

Rather than the standard scheduled wormings of every 6

wks/3 mos. and rotating chemicals to offset resistance, Dr. Starita suggests instead that we:

- 1) Provide an adequate diet suited to the animal's needs – this includes high quality feedstuffs uncontaminated by inorganic chemicals and fertilizers; vitamins; high levels of minerals; & fresh water.
- 2) Detoxify and support the liver, kidney and bowel on a regular basis, i.e. every four months for the average horse."

For us, an "adequate diet" means following the basic **DYNAMITE** nutritional program of free choice grass hay; the four free choice minerals of **NTM Salt, 1:1, 2:1**, and **Izmine**; and a bit of concentrate such as **Dynamite Regular, Plus** or **TNT**.

Both the **1:1** and the **2:1** contain chelated copper, among numerous other valuable nutrients, to ensure that most horses receive adequate levels. In fact, we have observed most horses tend to start eating larger amounts of either one or both of these free-choice powders during times of stress (training, campaigning, etc.) and climate/season change. Their immune systems at such times require boosting. For the darkly pigmented, adding **SOD** either quarterly or small amounts daily may be the answer since numerous owners have reported deeper coat colors when using the **SOD**.

For the "detoxify and support the liver, kidney and bowel" aspect, Dr. Starita suggests **DYNAMITE Herbal Tonic** quarterly according to directions and **DYNAMITE Excel** at the rate of only ½ to 1 teaspoon daily. In fact, many people, us included, consider **Excel** to be a viable alternative to daily wormers even though it is not, nor will it ever be, classed as any sort of a wormer at all.

Spring, with it's burgeoning growth of all forms of life, is probably the best time to take advantage of the multitude of *vermifuge* and liver-supporting herbs within the **Herbal Tonic** formula. The best procedure we have found is to follow the full 28 day dose at 1 ounce per day added to the horses' base of **PGR**, **DynaPro** and the free choice mineral powders. No concentrates such as **Regular, Plus, TNT**, etc. should be fed while detoxing.

The 28 day plan covers all phases of the moon. If you choose the two week plan, do cover at least the full moon since the fluid pressure in the cells is at a peak allowing for a better kill rate. In fact, with *any* deworming program, this is a wise move.

We have found it best to spray the horses' feed with a bit of water to dampen it slightly so the powder sticks to it. Horses new to **Tonic** may sometimes initially turn up their noses at the different odors, etc. but just stay with the program and they will come around. A few drops of **DynaSpark** on the mix should encourage even the most recalcitrant equine to gobble it up while those used to the various **DYNAMITE** offerings gobble just about anything we feed them anyway!

Healthy intestines are also vital for parasite control. We choose to give daily or weekly **DynaPro** to our horses, again depending on need. Youngsters until the age of 2 when their guts mature, geriatrics, heavily trained or campaigned animals, or just plain stressed, can all benefit from daily **DynaPro**.

General Considerations

- 1) Never try deworming or detoxing within two weeks, before and after, of undergoing physical or emotional stressors such as vaccination, dental work with tranquilizers, gelding, campaigning, breeding or foaling; take care of this before and/or after such times.
- 2) It is best for your horse to avoid using or working with it the same day as chemically de-worming it (same goes for vaccinations).
- 3) Never chemically deworm a seriously debilitated or sick animal, especially one with a fever, but, rather, build it up first until it is strong enough to deal with the ramifications. "If a horse is thin, deworm it" can be absolutely the **wrong** advice! In addition to seeing way too many rescue operations fail due to over-enthusiastic de-worming (sometimes suggested by the vet!), we have also been called in too frequently to save horses with severe GI tract ulceration for the same reason. Unfortunately we were too late in one recent situation, but a number of other times have been happily successful.
- 4) When horses do require deworming, we generally suggest starting off with the least toxic substance first, then checking the results with a new fecal. In other words, begin with a round of **Herbal Tonic**; 2 weeks later, perform a fecal or two. If the count is still over 200, then either another round of **Tonic** can be tried or go to one dose of Safeguard. Again, 2 weeks later, one or two fecals. If counts are still over 200 (we have not heard of this for horses on the full basic **DYNAMITE** program plus daily **Excel!**), try just a ½ dose of Ivermectin. Chemical deworming may prove to be unnecessary in the long run when following the **DYNAMITE** program.
- 5) Consider detoxifying with **Excel** for a few days to a week following chemical deworming.
- 6) If your barn insists on daily chemical dewormer, you might be able to suggest that the chemicals not be used during winter months when both parasite activity and reinfestation chances are at a minimum.
- 7) Parasites thrive in acidic conditions and chemical dewormers themselves create such an environment. It takes beneficial bacteria, vital for nutrient absorption, about 90 days to develop healthy colonies again. In order to produce the alkaline environment that supports and nourishes these workers, we suggest following up any chemical deworming by adding **DynaPro** to daily feed for at least 2 weeks.
- 8) Over the years, we have had numerous reports of horses expelling worms when starting on the **DYNAMITE** basics program. We believe this is due to the increased alkalinity of the intestinal tract, which parasites find offensive although it supports the beneficial bacterial colonies. There is also a certain magnetic resonance that the parasites prefer. Worms are diamagnetic and **Miracle Clay**, which

is in all **DYNAMITE** feeds plus available separately, is strongly paramagnetic. The parasites are actually repelled electro-magnetically by this **Clay** which many horses find in the wild as bentonite.

- 9) Remember your dogs and cats, too. **Herbal Tonic**, at the recommended rate of ½ tsp/day/30# body weight, will work the same way for them as for horses.
- 10) If feeding your dog **DynaCoat** for a period of time rather than cycling it in as recommended, you may notice diminished intensity of coat color. This is because **DynaCoat** is high in zinc which can suppress copper levels. Put the dog on a round of human **SOD** to increase copper levels. In fact, many professional handlers feed their darkly pigmented dogs rounds of human **SOD** about 10 days before showing since it will increase depth of coat and mouth color.
- 11) Many **DYNAMITE** distributors, dealing with animals on an intimate daily basis and knowing that parasites can easily cross species lines, also like to do a quarterly cleanse using ½ tsp or so daily of **Herbal Tonic** even though it is not labeled for human consumption.
- 12) Remember to detoxify your soil as well if you have been using chemical dewormers. **DYNAMITE HumiZyme** is superb for this; see our Fertilizer section for details.

What About Bots?

As for flies, including bots, gnats and other flying pests, clean, nutritionally balanced horses do not seem to attract the numbers and varieties most people are used to. In fact, one of the first things we hear from people starting their horses on the program is that their horses no longer are bothered so radically by flies, etc. and their urine and feces no longer smell as much.

Dyna-Shield is an effective natural repellent alternative to dangerous chemicals. It can be diluted in part with **DYNAMITE**'s pure, un-pasteurized **Super ACV** (Apple Cider Vinegar) at a 1:3 water ratio rather than straight water for even more effectiveness. Some raw garlic cloves can be added to the feed, but long-term, heavy use of garlic for horses can result in suppression of selenium.

The best offense against bots is spraying horses' legs with low dilution **Dyna-Shield**. The flies will be repelled, but if they do land, the oil alone will make the eggs less able to stick. In fact, simply coating existing eggs with oil will smother and kill the eggs so they cannot hatch. You can also "comb" them off.

If you fear a heavy internal load, many **DYNAMITE** users have found that, rather than using the full recommended dose of Ivermectin, only a one fifth dose (*i.e.*: a 200# dose for a 1000# animal) eliminates bots thoroughly with less chance of side effects.

WE LIVED THIS routine for years with our own and boarded horses, and rarely had parasitic overload other than new arrivals or those still working on balancing out. And we have never had to use more than a single tube of Safeguard as our strongest medication. ■