CHAPTER 17
Use of Ivermectin in Horses

W.C. Campbell, W.H.D. Leaning, and R.L. Seward

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   G. Onchocerca cervicalis
   H. Other helminths
      I. Gastrophilus spp. (bots)
      J. Sarcoptes scabei

I. Products

A. EQVALAN PASTE™; ZIMECTERIN PASTE™

This is a paste, for oral use, containing 1.87% w/w ivermectin. In the United States, it is available in a prefilled syringe, calibrated so that each increment represents the amount of drug needed for 250 lb (114 kg) of body weight at the rate of 200 μg/kg. Each syringe contains enough paste to treat one mature horse. The syringe sold in international markets is calibrated to deliver the amount of drug needed for 100 kg (220 lb) of body weight at 200 μg/kg.

B. EQVALAN LIQUID™

This product is a clear, ready-to-use liquid for professional administration by stomach tube (nasogastric intubation) or as an oral drench. It contains
1% ivermectin and various excipients. The recommended dosage is 200 μg/kg, and each ml contains enough ivermectin to treat 110 lb (50 kg) of body weight.

C. **Eqvalan Injectable™**

Eqvalan injectable™ is a micellar formulation containing 20 mg of ivermectin per milliliter of sterile aqueous solution (2.0% w/v) intended for intramuscular injection. Manufacture and distribution of this product were suspended in 1984. Adverse reactions have included some that were severe or even fatal. In most instances contamination of the injection site with bacteria (*Clostridium* sp.) appears to have been involved, while in others the reaction appears to have been of the anaphylactoid type and was associated with inadvertent intravenous injection or the presence of polysorbate 80 in the micellar formulation.

II. Antiparasitic Efficacy

A. **General**

Most of the early studies on the efficacy of ivermectin in horses involved intramuscular injection of the drug. Because the injectable product is no longer commercially available its efficacy will not be discussed in detail here, and readers are referred to reviews by Campbell and Benz (1983); Egerton, Seward, and Robin (1984); Leaning (1984); Madigan (1984); Weiss (1984); Slocombe and colleagues (1984); Klei and colleagues (1984); and Campbell (1985).

The efficacy of parenterally and orally administered ivermectin in horses is almost identical. For a host species such as the horse—where widely different experimental protocols are used and where many species of parasites are involved—the compilation of data is cumbersome; and for practical purposes it may be more useful to tabulate the species or “claims” for which approval has been granted by major governmental regulatory agencies. This approach has the advantage not only of simplicity but of subsuming the elements of statistical probability and host safety that are integral parts of the registration process. Table 17.1 lists the “approved claims” for the oral use of ivermectin at 200 μg/kg in horses. The following summary of efficacy against individual species is limited to orally administered drug, except where data obtained using the injectable formulation are needed to introduce or supplement data obtained with the paste.

B. **Parascaris equorum**

When given orally in a paste formulation, ivermectin at 200 μg/kg totally eliminated the passage of *P. equorum* eggs in naturally infected horses.