Eprinomectrin: A great option as internal antiparasitic on livestock

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The goal of all livestock production lies in obtaining good production rates, which is achieved through proper control of variables related to the environment, the management, space and health of animals. However, when one of these variables is affected, production declines, and decrease profits for farmers. Among the major health problems worldwide, which produces a decrease in the production of all species we have to parasitism (Olaechea et al., 2003).

Parasitism affects directly on production, since it generates the appearance of nutritional disorders, causing improper development of the animals due to weight loss, anorexia, anemia, growth retardation, delayed sexual maturity and predisposes to secondary diseases. All these effects cause economic losses, and the effects can be quite serious for the animal. These and other aspects make hard the control, so it is necessary to develop and validate strategies based on the diagnosis and epidemiology of parasites, flock management and knowledge of the action of the antiparasitic drugs available. (Olaechea et al., 2003).

Gastrointestinal nematodasis in cattle is a condition caused by the presence of nematodes belonging to different families, being the most common Strongylidae family, which have direct cycle, and therefore the nexus of contagion is the field of grazing through feed intake, where the infective larvae (L3) is located. These cause gastrointestinal disorders such as diarrhea, cachexia and anemia. It impact negative and constantly on livestock productivity, especially in young animals, helminth infestations being the main cause of economic losses in livestock production (Rojas, 2004)

To have proper control of gastrointestinal parasites there should be reduced the parasite population and restrict infection. This is achieved through the application of appropriate drugs and implementation of farming systems that reduce contact between parasites and animals, respectively. To treat these parasitic diseases exists a variety of compounds including eprinomectin (Olaechea et al, 2003). Eprinomectin is a macrocyclic lactone, bio-synthetic derivative from an avermectin (Merck, 2007, EMEA, 1996). Among its main properties, we should mention an ectoparasiticidal activity (Hoste et al., 2004) and is highly lipophilic, allowing to have a high tissue distribution and prolonged retention in plasma. These features, along with its elimination in milk below the maximum acceptable level of 30 ng/ml (Dupuy et al., 2001), make its use as an appropriate way of control of many parasitic diseases during the lactation period in these species (Sumano and Ocampo , 2006).

Eprinomectin is indicated for gastrointestinal nematosis caused by parasites such as Haemonchus placei, Ostertagia ostertagi, Trichostrongylus axei, T. colubriformis, Cooperia oncophora, C. punctata, C. surnabada, helvetianus Nematodirus, Oesophagostomum radiatum, Bunostomum phlebotomum, Trichuris spp. and Dictyocaulus viviparus; and is also used against lice, mites, larvae and adult flies (Plumb, 2011).

Eprinomectin selectively binds to the chloride channels controlled by glutamate that exist in nerve and muscle cells from invertebrates, leading to an increase of chlorine ion permeability hyperpolarizing the neuron and the interruption generating nerve impulses and producing parasite paralysis and death of the parasites. It also increases the release of Gamma amino butyric acid (GABA) on presynaptic neurons, which acts as an inhibitory neurotransmitter and blocks post-synaptic stimulation of the adjacent neuron in nematode or arthropod muscle fiber (Plumb, 2011 , Merck, 2007).

The effectiveness of Eprinomectin has been the subject of several studies, among which we can mention

Gawor (2000) who showed that the effectiveness of Eprinomectin under field conditions can reach 97% against Strongylus type parasites in goats. In a separate experiment, a 100% effective against Haemonchus contortus, Teladorsagia circumcincta and 99.5% against Trichostrongylus colubriformis was obtained after treatment with pour on Eprinomectin (0.5 mg/kg) in sheep (Hoste et al, 2004). Pitt et al (1997) showed that eprinomectin has 99% more effective against Strongylus type parasites in cattle.

On the other hand, a commercial formulation of 0.5% Eprinomectin produced by Agrovet Market Animal Health (Eprimec ® Zero Pour On) have shown a decrease in eggs type Strongylus on feces on the order of 100% at both 7, 14, 21, 28 and 35 days post treatment in cattle in the Peruvian central highlands (Tang et al, 2008). On the other hand, Paz (2009) demonstrated that the application of that product had a positive effect on the rate of reduction of eggs type strongylus on 20 sheep in the Peruvian central highlands; after a week of applying the product there was reduced by 66% the number of eggs type strongylus found on feces; however, from day 14 to day 28 no eggs were found in feces, obtaining 100% effective on the control of eggs type strongylus.

As seen in the above studies, the Eprinomectin has great effect on the gastrointestinal nematode parasite burden animals, which makes it a great alternative for use on farms, being so easy to apply in his presentation as a solution "pour on "(EMEA, 1996); and in addition the Eprinomectin has shown fairly wide ranges of safety for use in animals, and on the earthworm entofauna environment (Halley et al, 2005) and it is notable that the withdrawal period is 0 days both for the production of milk and meat (Sumano and Ocampo, 2006)

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