

EM-IVERMIX 0.6% GRANULES

Description and Composition

EM-IVERMIX 0.6% GRANULES is a purplish pink, free-flowing granules. Each kg contains 6g Ivermectin as its active ingredient.

Pharmacodynamics

Ivermectin is a member of the macrocyclic lactone class of endectocides which have a unique mode of action. Compounds of the class bind selectively and with high affinity to glutamate-gated chloride ion channels which occur in invertebrate nerve and muscle cells. This leads to an increase in the permeability of the cell membrane to chloride ions with hyperpolarization of the nerve or muscle cell, resulting in paralysis and death of the parasite.

Compounds of this class may also interact with other ligand-gated chloride channels, such as those gated by the neurotransmitter gamma-aminobutyric acid (GABA).

The margin of safety for compounds of this class is attributable to the fact that mammals do not have glutamate-gated chloride channels, the macrocyclic lactones have a low affinity for other mammalian ligand-gated chloride channels and they do not readily cross the blood-brain barrier.

Pharmacokinetics

Maximum plasma concentration.

After administration of feed containing 2ppm tritium-labelled ivermectin to swine at the recommended dose rate of 0.1mg / kg / day, the plasma level of total ivermectin equivalents on-drug was 29.7ppb. By 21 days off-drug, the mean plasma level was below 0.1ppb.

Excretion: length of time and route

After administration of feed containing 2ppm tritium-labelled ivermectin to swine at the recommended dose rate of 0.1mg / kg / day, liver had the highest on-drug mean total residue level of 237.1ppb, followed by fat, kidney and muscle at 207.2, 116.8 and 57.5ppb, respectively. At 3 through 21 days off-drug, fat had the highest mean residue level. By 7 days off-drug mean total residue levels in liver, fat, kidney and muscle were 10.7, 18.0, 3.1 and 2.5ppb, respectively. The muscle tissue generally contained the least residue.

Accountability of dosed radioactivity in excreta collected 7 days on-drug and 21 days off-drug was 95.6 to 105.7%. Only 0.1 to 0.3% of the recovered radioactivity was in urine. The remainder was in the faeces. The majority of radioactivity was excreted by 3 days off-drug.

Environmental Properties

Extremely dangerous to fish and aquatic life. Do not contaminate surface waters or ditches with the product or used container.

Indication

Effectively controls the following parasites of swine:

Gastrointestinal roundworms: *Ascaris suum* (adults and L4), *Hyostrongylus rubidus* (adults and L4), *Oesophagostomum* spp. (adults and L4), *Strongyloides ransomi* (adults)*

Lungworms: *Metastrongylus* spp. (adults)

Lice: *Haematopinus suis*

Mange mites: *Sarcoptes scabiei* var. *suis*

*Given to pregnant sows before farrowing, it effectively controls transmission via milk of *S. ransomi* to piglets.

Recommended Dose

To ensure thorough dispersion of the product it should first be mixed with a suitable quantity of feed ingredients before incorporation in the final mix. Only to be used with dry feed.

The recommended dose level is 100mcg ivermectin / kg body weight fed daily for seven consecutive days. The appropriate inclusion rate of the premix, in grams per tonne of finished feed, can be calculated as follows:

$$\text{Premix inclusion rate} = \frac{100 \times \text{average body weight}}{6 \times \text{average daily feed intake}} \text{ (g / tonne feed)}$$

Growing pigs

The recommended dose level of 100mcg / kg body weight daily for seven days is obtained under most circumstances, for pigs up to 40kg body weight, by including 333g ivermectin premix in each metric tonne of final feed. The ivermectin should be thoroughly mixed in the finished feed and fed continuously as the only ration for seven consecutive days.

In pigs weighing 40kg live weight and over, average daily feed consumption may fall below a feed intake of 5% where restricted feeding programmes are in use or where pigs are fed a ration high in protein.

For pigs weighing 40kg and over, include 400g ivermectin premix in each metric tonne of final feed.

Adult pigs

The recommended dose level for adult pigs weighing over 100kg live weight is achieved under most circumstances by thoroughly mixing 1.67kg of the premix with 1 tonne of swine ration. The resultant medicated feed is to be fed at the rate of 1kg per 100kg body weight each day for seven consecutive days, as part of the individual ration. Where medicated feed is to be fed as part of the ration, it is recommended that the ivermectin medicated feed is fed first.

After this is consumed, any remainder of the daily feed allocation should be provided. This should be repeated for seven consecutive days.

Alternatively, where dry feed intake can be accurately determined and all animals to be treated have similar body weight, the inclusion rate can be calculated using the previous formula to allow sole feeding of medicated feed.

RECOMMENDED TREATMENT PROGRAMME

Growing pigs

Groups of growing pigs should be treated for seven consecutive days on transfer to clean quarters. Where an all-in all-out system is not possible, it is recommended that the in-feed parasite control programme should begin with treatment of all growing pigs already in the house.

Breeding animals: Breeding animals are treated by feeding medicated feed for seven consecutive days. At the time of initiating any parasite control programme, it is important to treat all animals in the herd. After the initial treatment, use the premix regularly as follows:

Sows: Treat, preferably 14 - 21 days, prior to farrowing, to minimize infection of piglets.

Gilts: Treat 14 - 21 days prior to breeding. Treat 14 - 21 days prior to farrowing.

Boars: Treat at least 2 times per year. Frequency of and need for treatments are dependent upon parasite exposure.

Note (1): Exposure of treated pigs to infected animals, contaminated premises, soil or pasture may result in re-infestation and re-treatment may be necessary.

Note (2): Since the effect of ivermectin on mange mites is not immediate, avoid direct contact between treated and untreated pigs for at least one week after completion of treatment.

Note (3): Since louse eggs are unaffected by ivermectin and may take up three weeks to hatch, retreatment may be necessary.

Route of Administration

For oral administration via feed.

Contraindications

Do not use for any other animal species as severe adverse reactions, including fatalities in dogs may occur.

Warning and Precautions

Special warning for each target species: None.

Special precautions for use

Special precautions for use in animals: None.

Special precautions to be taken by the person administering the veterinary medicinal product to animals

Do not smoke, drink or eat while handling the product. Wash hands after use. Mixing of the product with feed must take place in a well-ventilated area. Avoid contact with skin and eyes. In case of accidental contact, wash the affected area thoroughly with clean running water. If eye irritation persists, seek medical advice.

Interaction with Other Medicaments

No incompatibilities with other commonly used products were observed.

Pregnancy and Lactation

At the recommended use level, no adverse effects on fertility or gestation in breeding animals were observed.

Side Effects

No undesirable effects have been observed when the product is administered to swine at the recommended dose rate.

Symptoms and Treatment of Overdose

When included in the ration of pigs at levels up to 5 times the recommended dose of 0.1mg ivermectin per kg body weight for 21 consecutive days (3 times the recommended treatment period), the product did not produce treatment related adverse reactions. No antidote has been identified.

Storage Condition

Store below 30°C.

Shelf Life

3 years. To be used within 24 hours after mixing into feed.

Withdrawal Periods

Pigs (over 100kg): 12 days Pigs (under 100kg): 3 days

Packing

10kg, 25kg.

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