

WARNING:
KEEP OUT OF REACH OF CHILDREN
FOR ANIMAL TREATMENT ONLY

DEPODINE™

IODISED OIL FOR INJECTION

**FOR THE TREATMENT AND PREVENTION OF PRIMARY
AND INDUCED IODINE DEFICIENCY IN SHEEP AND CATTLE.**

DESCRIPTION

DEPODINE™ consists of iodised peanut oil and is designed for intramuscular injection. It contains 26% w/v of iodine bound to the ethyl esters of the unsaturated fatty acids (chiefly oleic and linoleic) in the oil. DEPODINE™ is a clear to slightly cloudy oily liquid, depending on temperature, with a slight yellowish hue. With gentle warming this cloudiness will clear. At temperatures below 5°C it becomes increasingly viscous and solidifies. It is best that the oil is not frozen, but if this occurs it can be restored to its liquid state by warming to room temperature without loss of efficacy.

IODINE DEFICIENCY

Iodine is an essential element and deficiency can lead to a number of diseases, both clinical and subclinical, which are often accentuated in young, growing animals and lactating females. It is required by the thyroid gland for the manufacture of thyroxine (T₄) and the metabolic hormone tri-iodothyronine (T₃). The most common manifestation of iodine deficiency in domestic species is goitre or swelling of the thyroid gland, which is most often seen in perinatal lambs, kids and calves. Subclinical iodine deficiency may be related to reduced neonatal survival, effects on the development of the central nervous system, gonads, heart, lungs, skin and hair follicles, as well as prolonged gestation and dystocia, especially in the ewe.

Two forms of iodine deficiency are recognised, primary and secondary, the latter being the

more common under New Zealand conditions. Primary deficiency is caused by an inadequate dietary intake of the element; many New Zealand pastures and winter root crops contain inadequate amounts of iodine, which can lead to deficiency disease. Secondary deficiency is caused by the ingestion of goitrogens from cruciferous crops and clover pastures. Many of these plant species contain glucosinolates, which are converted to thiocyanate ions in the rumen. Thiocyanate ions compete with iodine for uptake by the thyroid gland, limiting availability of iodine for thyroxine biosynthesis.

DIAGNOSIS OF IODINE DEFICIENCY

A variety of criteria have been used to diagnose iodine deficiency in grazing ruminants, none of which is completely reliable. The concentration of thyroid hormone levels (T₃, T₄) in the blood appears to be an unreliable indicator of iodine status of ruminants as is the iodine content of pasture. Goitre in lambs is the principal sign of deficiency, especially when a number of lambs in the flock are affected, and in subclinical situations, the relative size of the neonatal thyroid has been found to be useful in quantifying deficiency. A ratio of neonatal thyroid weight (g) to body weight (kg) exceeding 0.4 has been found to be associated with higher perinatal mortality in sheep. Urine iodine promises to offer better prospects for measuring body iodine status in sheep, and has been used extensively in humans, however analysis is difficult and is not presently available for routine use.

Because selenium is required for the synthesis of iodothyronine deiodinase (ID-I), one of the enzymes responsible for the conversion of thyroxine to tri-iodothyronine, a deficiency can contribute to hypothyroidism. Therefore it is recommended that the selenium status of sheep at risk from iodine deficiency be monitored to ensure that selenium deficiency does not complicate a primary or secondary iodine deficiency. Iodine deficient sheep that are also selenium deficient may not respond to iodine supplementation.

ACTION OF IODISED OIL

The oil is slowly released from its depot site in the muscle of the neck and is taken up by the lymphatics, making its way to the regional lymph nodes. From here, it is metabolised to fatty acids and free iodine over a period of months. The product is capable of treating both primary and secondary iodine deficiencies, the latter by competing with goitrogens of the thiocyanate type at the level of the thyroid gland. Normally, one injection of iodised oil will supply sufficient iodine for a period of a year.

INDICATIONS

For the treatment and prevention of primary and secondary (thiocyanate type) iodine deficiency in sheep and cattle of all ages.

A. Treatment of iodine deficiency:

Animals with goitre, and those suspected of having subclinical iodine deficiency, should be treated with a standard dose of iodised oil. It is recommended that ewes and cows also be treated when goitre is detected in lambs and calves.

B. Prevention of primary iodine deficiency:

Lambs: Treat at weaning

Ewes: Treat one month before mating, or not less than two months before lambing.

Rams: Treat one month before mating.

Calves: Treat at weaning.

Cattle: Treat one month before mating, or not less than two months before calving.

C. Prevention of induced iodine deficiency.

All Stock: Treat at least two months prior to the feeding of Brassica or other goitrogenic

(goitre-producing) crops. Repeat treatment annually to avoid subclinical iodine deficiency.

Dairy cattle may require more frequent treatment to maintain adequate iodine levels.

DIRECTIONS FOR USE

For intramuscular injection in the anterior half of the neck.

Sheep & Lambs: 1.5mL

Cattle: 3-6mL according to bodyweight.

Recommended dose in ADULT cattle is **6mL**

A dose of **8mL** can be given to adult dairy cows to increase the iodine level in milk.

This may be beneficial to people on an iodine-deficient diet.

DEPODINE™ can be injected through a 16 gauge needle, and is suitable for administration by using a draw-off tube and injector.

Under cold ambient conditions, the bottle may be warmed in a water bath at 20-25°C to improve flow through the injector and needle.

NOTE: Not suitable for use if contents remain cloudy, even after slight warming.

By law the user must take due care, obtaining expert advice when necessary, to avoid unnecessary pain and distress when using the product other than as directed on the label.

WITHHOLDING PERIOD

Milk and Meat: **NIL**

Store below 25°C. Do not freeze.

Protect from light in the original labeled container.

ACVM Registration No. A10699

See www.foodsafety.govt.nz for registration conditions.

Approved pursuant to the HSNO Act 1996, Approval Code: HSR002521

See www.epa.govt.nz for approval conditions.



Registered to
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