



**WORLD LEADERS
IN BOLUS
TECHNOLOGY**



**providing core strength
for LAMBS and all
ADULT SHEEP**



I

IODINE - BETTER LAMB VITALITY

Co

COBALT - APPETITE AND WEIGHT GAIN

Se

SELENIUM - GROWTH

Why are trace elements essential for your lambs and sheep?

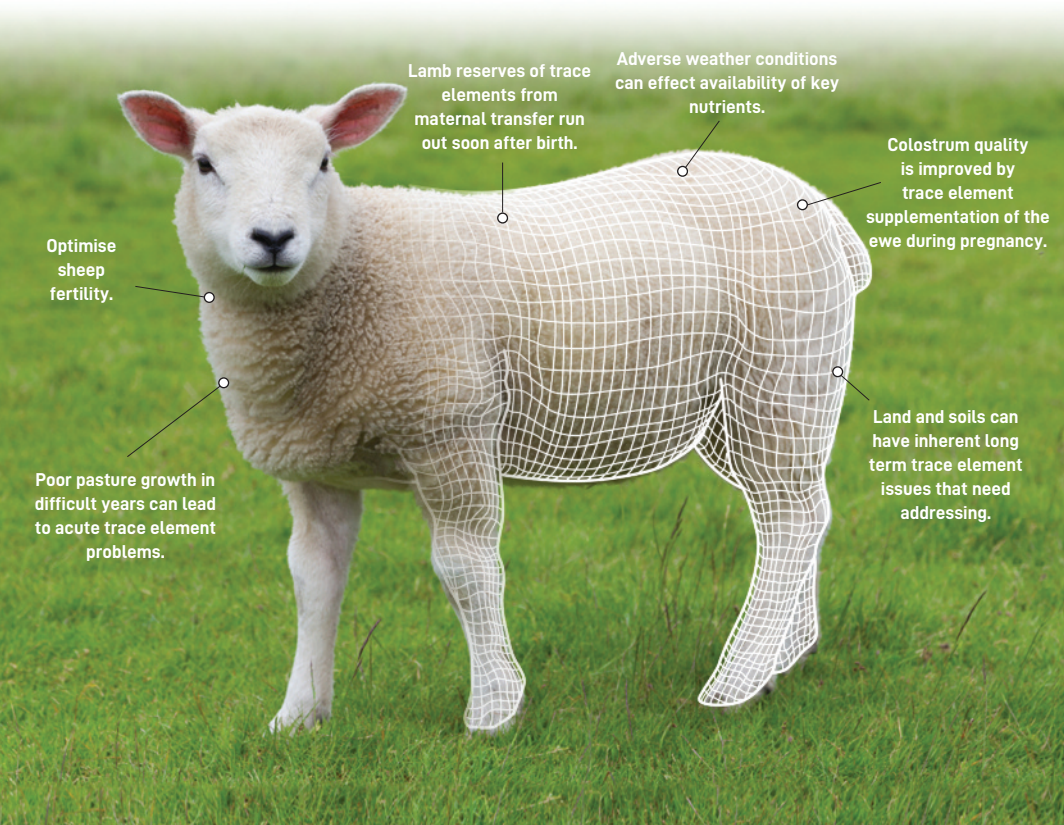
Over recent years we have learnt a lot about how the correct balance of trace elements is essential for ruminant animals to achieve their full performance.

Nutritionists, veterinary surgeons and ruminant advisors have seen major quantifiable improvements in performance from ensuring animals have the precise quantities of vital trace elements they need at key stages of their production cycle.

In modern efficient sheep production systems, trace elements are best managed from conception, progressing through pregnancy to birth with lambs benefiting from maternal transfer of nutrients during pregnancy and then in the colostrum and milk at birth.

As lambs grow, the effect of this support diminishes and the lamb has to meet its own metabolic needs through its own nutrition.

Furthermore, lambs are particularly vulnerable to nutritional stress resulting from weaning and changes in the quality of grazing together with adverse weather conditions. This often shows itself in terms of poor liveweight gain and greater susceptibility to illness.



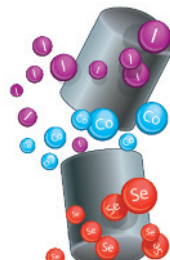
What are Agrimin 24•7 SMARTRACE® boluses?

Developed by the Agrimin technical team and researched extensively in New Zealand, Agrimin 24•7 SMARTRACE® technology is a 'best practice' precision nutrient delivery system to optimise ruminant performance designed and manufactured in the UK.

Agrimin 24•7 SMARTRACE® LAMB and ADULT SHEEP boluses are specifically developed products using our latest sustained release concept and designed to deliver precise levels of key trace elements at all times.



LAMB bolus



SHEEP bolus

Agrimin 24•7 SMARTRACE® boluses contain the most important trace elements required for health and growth



Iodine is incorporated into the hormones produced by the thyroid gland. A healthy functioning thyroid promotes more efficient weight gain. The feeding of rape, roots or other brassicas can inhibit the absorption of iodine into the body.



Rumen micro-organisms need a constant supply of cobalt in order to produce vitamin B12, which is essential in the breaking down of feed and a more efficient conversion to liveweight. Cobalt plays an important role in ensuring optimum appetite, growth, development and vigour.



The anti-oxidant function of selenium means that it is associated closely with vitamin E. Selenium plays an important role in promoting growth, by maintaining the correct functioning of muscles and vital organs such as the liver, and a healthy immune system.



Copper plays an essential role in the activity of many enzymes. These enzymes mean adequate copper status is crucial for reproduction, growth, bone development, wool production including pigmentation and immunity. There are genetic differences in copper requirement between sheep breeds therefore copper should not be supplemented to animals susceptible to copper toxicity.

DAY

1

The journey of the Agrimin 24•7 SMARTRACE® PLUS

One Agrimin 24•7 SMARTRACE® PLUS bolus gives each sheep 180 days of highly cost-effective trace element support.

1

24•7 SMARTRACE® PLUS bolus is given to the sheep with the specially designed applicator and moves down the animal's oesophagus.

2

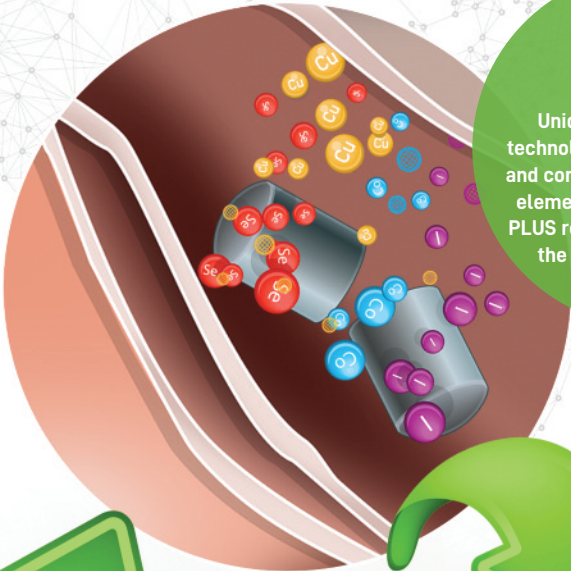
24•7 SMARTRACE® PLUS bolus moves down to the rumen and lodges safely in the sheep's reticulum. Wrapper dissolves and bolus breaks into two core elements.



3

Unique 'physical erosion' technology produces measured and consistent delivery of trace elements. 24*7 SMARTRACE® PLUS releases just enough into the sheep's bloodstream at all times.

The diagram shows a cross-section of a sheep's stomach and intestines. A grey, cylindrical SmartTrace PLUS device is positioned in the small intestine. Numerous small, colorful spheres representing trace elements (labeled with chemical symbols like Cu, Se, Zn, and I) are shown being released from the device into the surrounding intestinal environment. A large green arrow points from this diagram towards the next stage.



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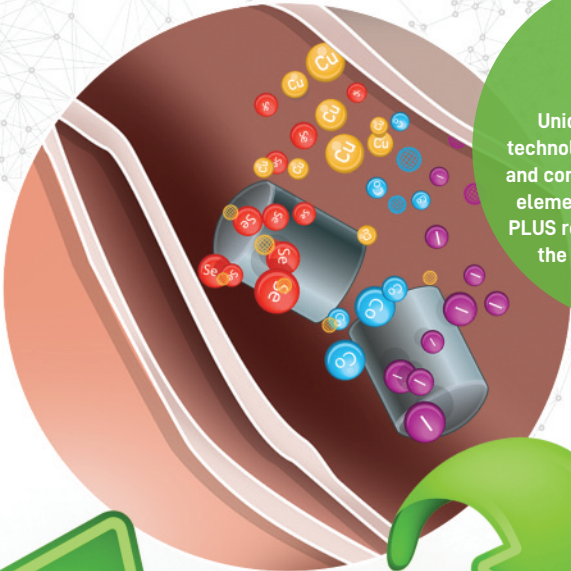
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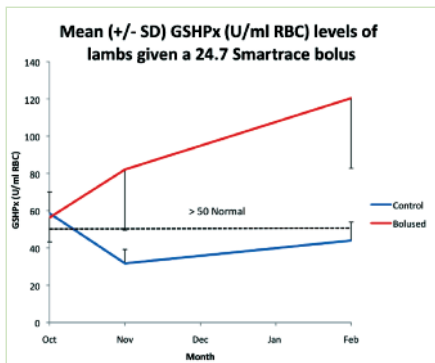
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Lamb Trial

Trials carried out in the autumn of 2014 show the efficiency of delivery of trace elements with Agrimin 24•7 SMARTRACE® LAMB boluses.

The trials involved several groups of lambs. Half the animals were given the Agrimin 24•7 SMARTRACE® LAMB bolus at the start of October and the remainder acted as controls. Although the boluses contained iodine, cobalt and selenium, selenium (GSHPx) levels were used as the marker to assess bolus performance with these measured at the start of November and end of February. For optimum animal performance the aim is to keep the GSHPx above 50 U/ml RBC which indicates normal selenium status.



- At the start of the study both groups were just above the threshold for normal.
- By November, 90% of all control animals had a GSHPx level below 50 U/ml RBC, whereas 90% of the bolused animals still had levels well above this threshold.
- After 4 months GSHPx (or selenium levels) of the bolused animals were all still well above the threshold of 50 U/ml RBC, while 80% of controls were still below.

Agrimin 24•7 SMARTRACE® for LAMBS

Agrimin 24•7 SMARTRACE® LAMB boluses should be administered to lambs with a minimum 25 kg liveweight and a fully functioning rumen. Suitable for growing lambs, store lambs, finishing fat lambs, replacement breeding stock and show animals.

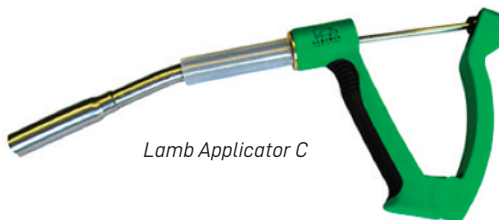
Active Composition	mg/kg (Packaging)	Average daily supply over 120 days from two 6 g boluses
Iodine (Calcium Iodate)	8,592 mg/kg	0.9 mg
Cobalt (Cobalt Carbonate)	8,481 mg/kg	0.8 mg
Selenium (Sodium Selenate)	1,656 mg/kg	0.2 mg



Ingredients: Minerals, zinc powder and wax. All figures expressed as a proportion of total bolus weight.

FOR OVINE USE ONLY.

- Boluses are suitable for use in lambs over 25 kg liveweight.
- Give two boluses to each animal using Agrimin lamb bolus applicator.
- Agrimin 24•7 SMARTRACE® LAMB boluses have an active life of 120 days.
- Agrimin 24•7 SMARTRACE® LAMB boluses are available in packs of 200 boluses - enough for 100 lambs.
- Product approved for use in organically reared animals.



Lamb Applicator C



The Agrimin 24•7 SMARTRACE® range is approved by Organic Farmers and Growers.

Agrimin 24•7 SMARTRACE® for ADULT SHEEP is available in two formulations

24•7 SMARTRACE® ADULT SHEEP contains iodine, cobalt and selenium only with no copper.

Active composition	mg/kg (Packaging)	Average daily supply over 180 days from 48 g bolus
Iodine (Calcium Iodate)	15,875 mg/kg	4.2 mg
Cobalt (Cobalt Carbonate)	3,032 mg/kg	0.8 mg
Selenium (Sodium Selenate)	1,378 mg/kg	0.4 mg

Ingredients: Minerals, zinc powder and wax. All figures expressed as a proportion of total bolus weight.

FOR OVINE USE ONLY.

Agrimin 24•7 SMARTRACE® ADULT SHEEP:

- Boluses are suitable for use in adult sheep 40 kg + liveweight.
- Give one bolus to each animal using Agrimin sheep applicator A.
- Agrimin 24•7 SMARTRACE® ADULT SHEEP have an active life of 180 days. There is no residue.
- Agrimin 24•7 SMARTRACE® ADULT SHEEP boluses are available in packs of 50 boluses.



24•7 SMARTRACE® PLUS ADULT SHEEP contains optimum levels of copper, iodine, cobalt and selenium.

Active composition	mg/kg (Packaging)	Average daily supply over 180 days from 52 g bolus
Copper (Copper Oxide)	64,615 mg/kg	18.7 mg
Iodine (Calcium Iodate)	14,654 mg/kg	4.2 mg
Cobalt (Cobalt Carbonate)	2,798 mg/kg	0.8 mg
Selenium (Sodium Selenate)	1,272 mg/kg	0.4 mg

Ingredients: Minerals, zinc powder and wax. All figures expressed as a proportion of total bolus weight.

FOR OVINE USE ONLY.

Agrimin 24•7 SMARTRACE® PLUS ADULT SHEEP:

- Boluses are suitable for use in adult sheep 40 kg+ liveweight.
- Give one bolus to each animal using Agrimin sheep applicator A.
- Agrimin 24•7 SMARTRACE® PLUS ADULT SHEEP have an active life of 180 days. There is no residue.
- Agrimin 24•7 SMARTRACE® PLUS ADULT SHEEP boluses are available in packs of 50 boluses.
- Not for use in sheep breeds susceptible to copper toxicity



Applicator A - Sheep Bolus Range



The Agrimin 24•7 SMARTRACE® range is approved by Organic Farmers and Growers.



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Carmarthenshire sheep producer Paul Williams has used Agrimin 24•7 SMARTRACE® LAMB boluses with very encouraging results.

'All ewes are bolused pre tupping with an Agrimin 24•7 SMARTRACE® ADULT SHEEP bolus containing iodine, cobalt and selenium. Having received these vital trace elements through maternal transfer up to weaning, as soon as our lambs started grazing alone, they would lose condition and their growth rates would slow' says Paul.

'We've tried all sorts of methods for supplementation over the years but nothing has resolved the problem in the way we have now managed to.'

A group of lambs were given the specially developed 24•7 SMARTRACE® LAMB bolus and another group were given no supplementation.

2 months later the lambs with the bolus weighed 2.1 kg more than the others. Furthermore, blood levels of cobalt in the bolused lambs were double that of the others. The extra 1 kg of deadweight then produced at slaughter was worth 6 x the cost of the bolus.

As a result all lambs are now bolused one month before weaning and such supplementation is part of the flock's management moving forward.

Agrimin 24•7 SMARTRACE® LAMB boluses in practice



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ASSHEEP/LAMB 6/19

