FACTSHEET

Using targeted selective treatment to reduce drench use

Snapshot of the research

Using the SmartWorm® app for **Targeted Selective Treatment (TST)** helped reduce drench use while having little impact on lamb growth. SmartWorm® is a mobile app developed in Ireland by Cotter Agritech. In conjunction with an electronic ID (eID) tag, liveweight gain and other relevant information about the farm, the app can indirectly identify animals most likely to require a drench.

What we found

- **TST with the SmartWorm® app** cut drench use by almost half across all nine farms that took part in the research. This compared to animals in the trial that received a blanket (monthly) drench treatment.
- **Lamb Growth**: The first study (with three farms) showed no significant difference in weight gain (average of 3.6 grams/day over the trial). The second study (with six farms) showed that lambs treated with TST grew slightly slower than those given blanket drenches, but the results varied between farms (average of 10 grams/day over the trial with a range of 0-19.6 grams/day). This was more than expected and due to pushing the boundaries of the app on three of the nine farms involved in the study to understand how best to use it.
- **Economic Savings**: The average direct savings (including labour costs) were $2.22 per lamb in the first study and $2.34 in the second study. After accounting for the cost of eID, the net savings were about $0.59 per lamb in the first study and $0.65 in the second study. These savings varied depending on labour costs and the type of drench used on each farm.

Setting up and using the app

- Setting up the SmartWorm® app with farm equipment took a bit of time, but once it was set up, it worked well.
- Farmers found it useful, especially when combined with **faecal egg count (FEC)** results. One vet said, "It's a WIN-WIN-WIN – lower drench use, helping breed low-drench animals, and providing refugia."

Key tips from the trials

- Get help with the initial setup to ensure it works smoothly.
- The best results come when **pasture parasite levels** are well managed.
- Like other methods of creating refugia, **TST** can increase pasture larval contamination and it is best to use it as part of a programme with other tools like **leader-follower grazing ("truck and trailer grazing"), crop/graze rotations**, or **regrassing**.
- Sometimes, you may still need to use **blanket or combined blanket/TST approaches**. The app now allows you to keep a set perecent of the group always drenched to double-check the systems accuracy.
- TST may be able to be used in areas with **Haemonchus**, but it's important to talk to your vet first. The second study includes advice for dealing with this.

Factsheet 378. April 2025

More information

Vet Services Hawke's Bay managed the two studies to test whether the **SmartWorm® app** could reduce drench use on sheep farms by using T**argeted Selective Treatment (TST)**.

TST can help significantly slow drench resistance by leaving some worms unexposed to drench (called "refugia"). This helps reduce drench use while still protecting lamb performance, making it a valuable part of integrated parasite management.

The **SmartWorm® app**, used with **eID tags**, gives real-time drenching recommendations based on lamb age, weight, growth potential, feed, past and future rainfall, temperature, previous drenches received as well as faecal egg count and haemonchus percent in larval culture if available. It connects to automated weighing gear and farm data, showing a red (drench) or green (no drench) signal. It works with **auto-drafting systems** or manually.

Study details

- **Study One:** 3 farms in **Hawke's Bay** and **Wairarapa** ran 1,400 male winter trade lambs (May–August 2023).
- **Study Two:** 6 farms across New Zealand ran over 3,900 mixed-sex lambs (February–June 2024).
- **Case studies:** farm cases from study two were written up to demonstrate the outcomes for each farm (see following pages).
- Lambs were sub-divided into two groups: one group received regular monthly drenches, and the other group was treated based on **SmartWorm® app** recommendations. FECs and weights were tracked throughout.

Full reports for both studies are available on **Beef + Lamb New Zealand's Science and Research** webpage.

B+LNZ would like to thank the farmers who participated in these studies.

Project team

Glenside Farm

WAIRARAPA, 440 LAMBS

FAST FACTS

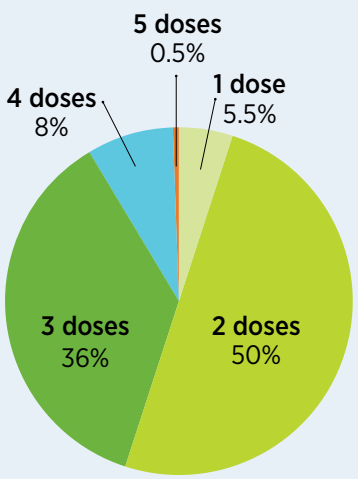
$2.78
$ savings (per lamb)

38%
Drenching reduction

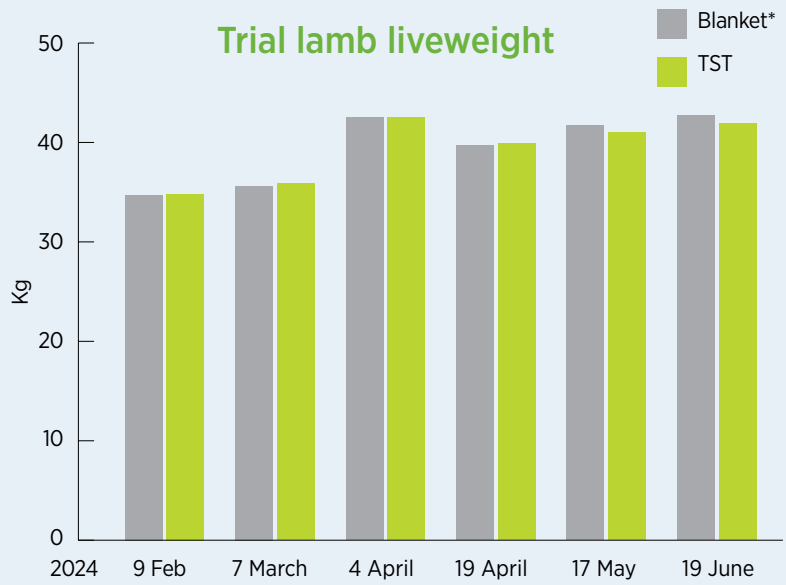
55%
of TST lambs given 2 or less doses over trial period

"We need to get more details out there about TST using SmartWorm and bring more awareness and support to this sustainable parasite control tool."
Paul Crick

Number of drenches given for TST lambs



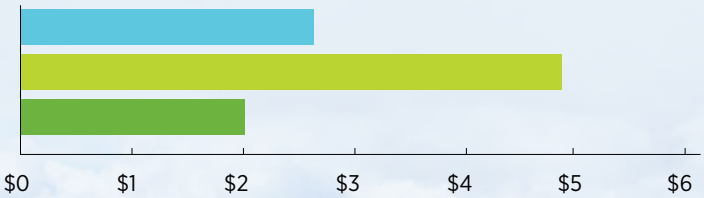
Trial lamb liveweight



*Blanket = lambs that were drenched at routine monthly intervals

Savings per lamb from lower drench use

Current Regime: 4 triple drenches + 1 Zolvix drench
Potential Future*: 2 triple drenches + 3 Zolvix drenches
TST Future*: 4 triple drenches + 1 Zolvix given selectively
*examples only



Breach Oak

MARLBOROUGH, SOUTH ISLAND, 272 LAMBS

FAST FACTS

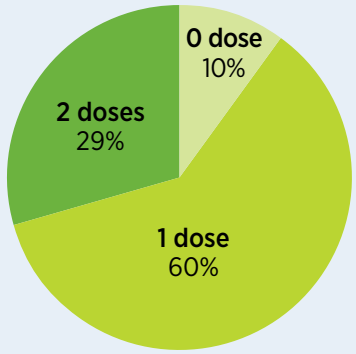
$2.18
$ savings (per lamb)

40%
Drenching reduction

10%
of TST lambs given 0 doses over trial period

> "SmartWorm is a game changer and worth perserving with. I trust it and am definitely integrating it into my breeding program."
>
> Warwick Lissaman

Number of drenches given for TST lambs



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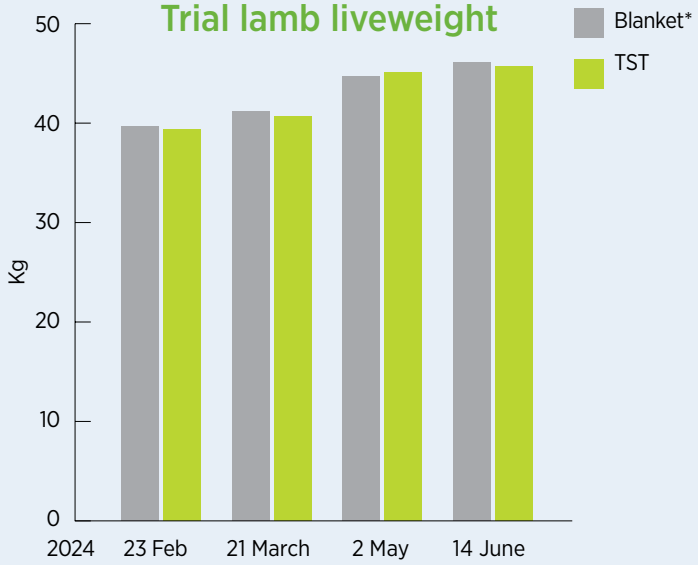

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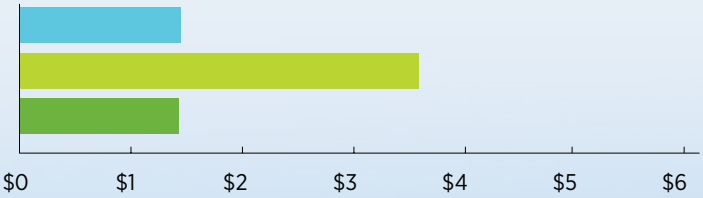


On this farm, drought conditions led to suboptimal live weight gain, prompting more drenching than necessary. Very low faecal egg counts led to delayed drench intervals.

Wakefield Farm

SOUTHLAND, 560 LAMBS

FAST FACTS

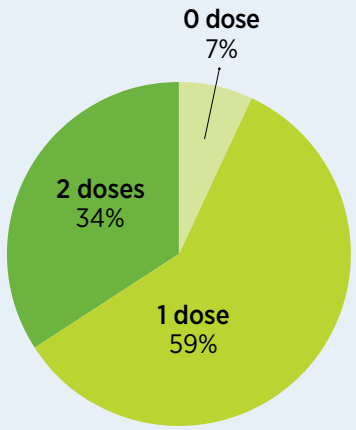
$1.88
$ savings (per lamb)

48%
Drenching reduction

7%
of TST lambs given 0 doses over the trial period

> **"Participating in the trial showed that drenching based on LWG can be beneficial, particularly when using the more expensive novel drenches."**
>
> WILL LINDSAY

Number of drenches given for TST lambs



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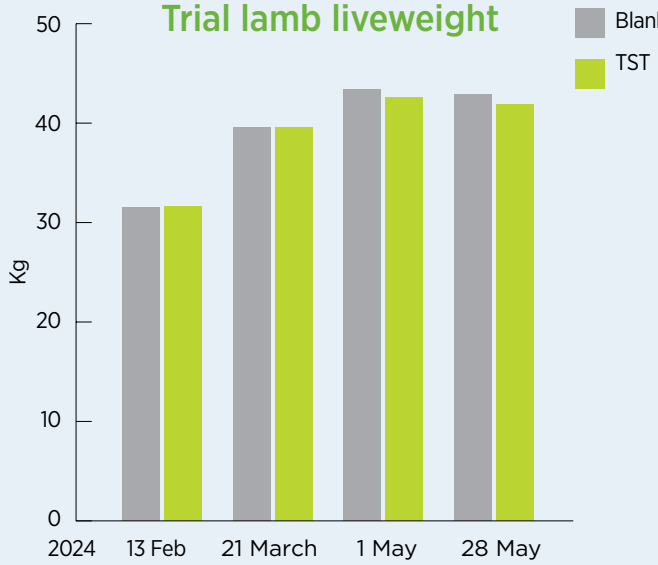

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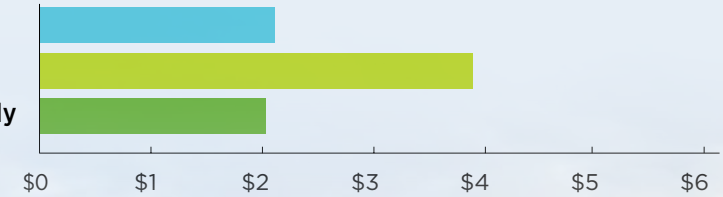


Blackburn Ridge

HAWKE'S BAY, 782 LAMBS

FAST FACTS

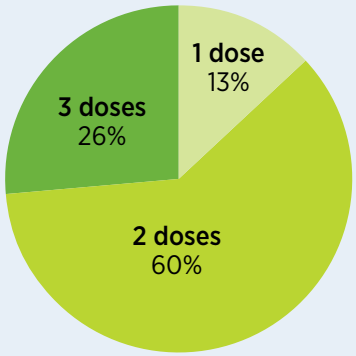
$2.09
$ savings (per lamb)

47%
Drenching reduction

74%
of TST lambs given 2 or less doses over trial period

"It's been an absolutely brilliant tool - it's not a choice with how precious the chemicals are."
Clem Trotter

Number of drenches given for TST lambs



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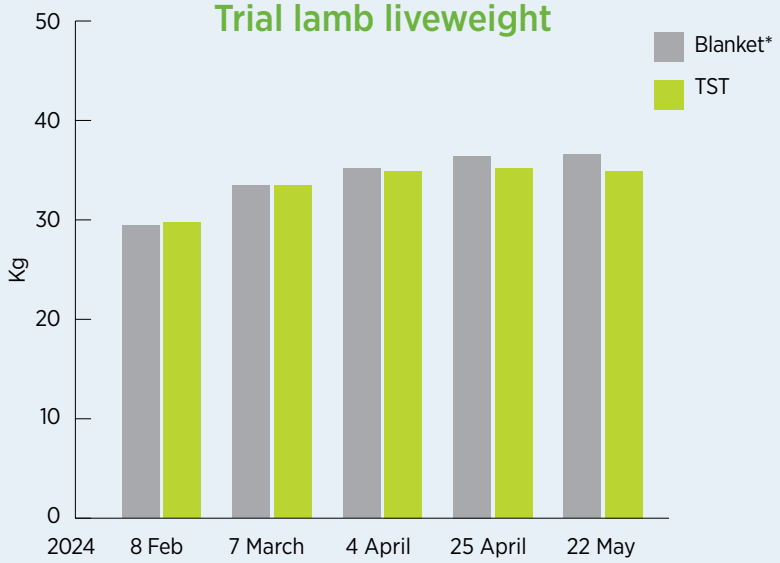

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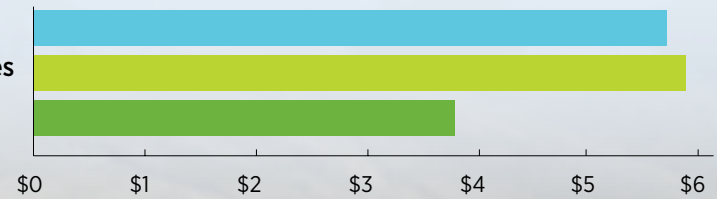


Hemingford Sheep & Cattle Genetics

NORTH CANTERBURY, 494 LAMBS

FAST FACTS

$2.35
$ savings (per lamb)

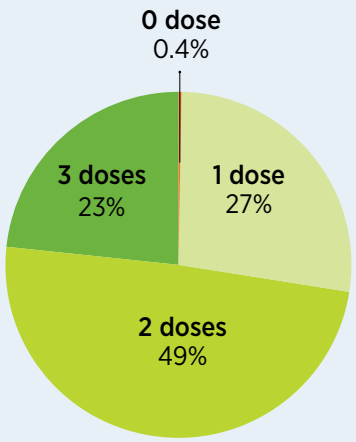
35%
Drenching reduction

28%
of TST lambs given 1 or 0 doses over trial period

"I think there is a large market for SmartWorm in NZ. It has a massive place. I have been waiting for something like this for a long time, I will ideally use it across all my lambs, especially for breeding to help in trying to get to a point where we don't have to drench at all."

Sam Holland

Number of drenches given for TST lambs



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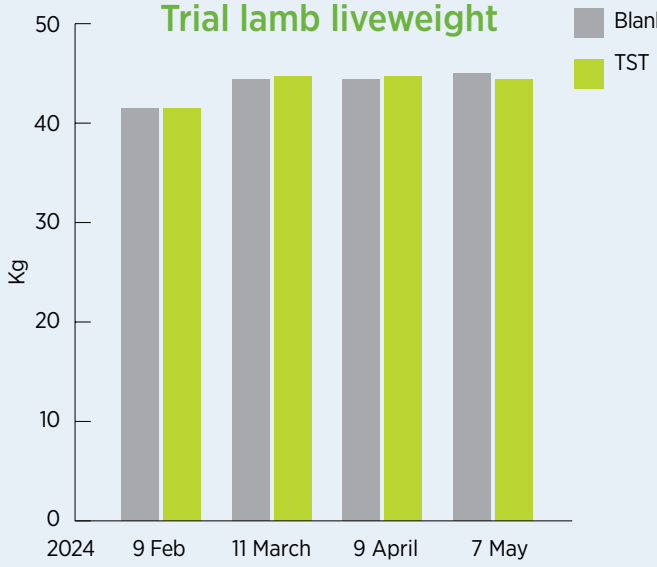

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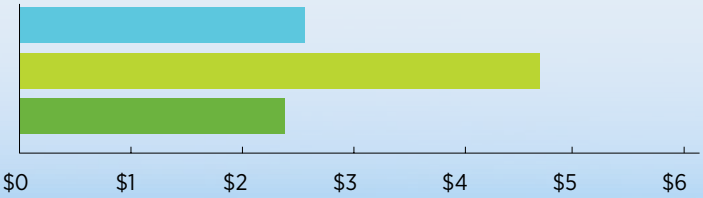


Otawhao

TARARUA, 662 LAMBS

FAST FACTS

$3.03
$ savings (per lamb)

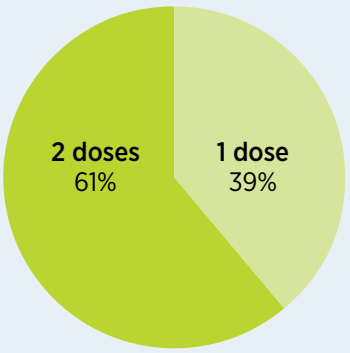
46%
Drenching reduction

39%
of TST lambs given 1 doses over the trial period

"I can see potential benefits in using EID tags and targeted selective drenching of replacement ewe lambs, based on average daily weight gain for individual animals."

DANIEL TARBOTTON

Number of drenches given for TST lambs



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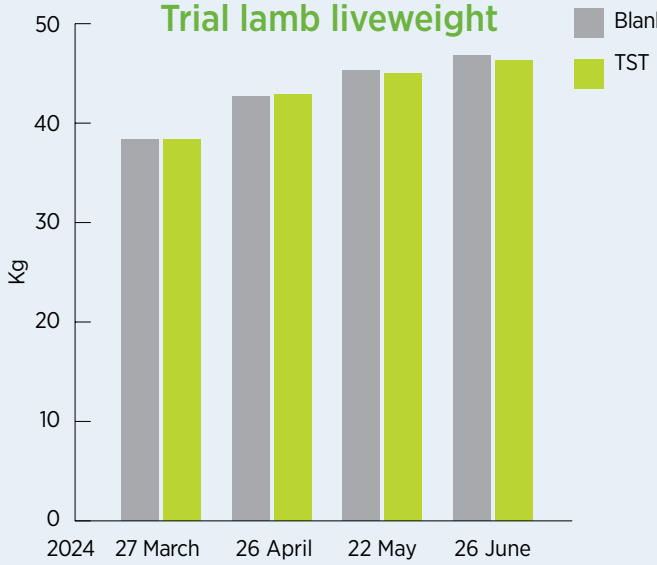

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