

groundTruth

Accurate, cost-effective, direct measurement of in-field nutrient leaching loss

www.grounded.co.nz

Components

Lysimeter

Very large, repacked, lined lysimeter (10 x 0.3m, 3m²). Long and narrow to sample both urine and non-urine areas in one transect. Suitable for all free-draining soils, even boulders up to 30cm diameter, with water table >1m depth. Measures leaching at 0.7-1m depth. Equivalent area to 15 standard research lysimeters.



Autosampler

- 1) Provides real-time drainage & rainfall data.
- 2) Collects samples to send for chemical analysis.

Solar powered, uses long-range radio for remote operation. Only visit when a sample actually needs collection. Push-button sample collection. Greatly simplifies leaching research.

Database / website

Records drainage volume, drainage EC, sampling events. Access data via website or by direct database connection (for researchers or resellers).

You can't manage what you don't measure

Why?

groundTruth

You can't manage what you don't measure.

Farmers are being expected to reduce nutrient losses, but have no way to measure loss. They are forced to rely on models, which are useful but have many shortcomings.

Grounded is changing this.

The GroundTruth System is the first practical way to directly measure leaching loss on-farm, *accurately*.

Practicalities

Install in 1 day, between crops (pasture will require resowing).

Lysimeter is completely buried, can be cultivated and grazed without damage.

Autosampler is above ground, up to 150m from lysimeter (e.g. by fenceline), easy to access. Solar powered, long-range radio link.

Accuracy

On-farm leaching measurements are very difficult, because loss is variable and driven by urine. A urine patch leaches a high quantity of N, while the area between patches may leach little.

To date, leaching measurement devices have been too small to account for both urine and non-urine areas, so very large numbers of devices are required to measure leaching loss. This is extremely expensive.

The GroundTruth lysimeter uses novel techniques to greatly increase the size of the lysimeter, while remaining affordable. It also adds real-time monitoring to allow farmers to actually use the device to inform day-to-day management, and to provide more detailed data for researchers.

Where research-level accuracy is required, one GroundTruth lysimeter per arable plot, and 3-4 per grazed plot, will give equivalent accuracy to leading university techniques (precise numbers depend on the situation).

Applications

- Farmlot and on-farm research
- Field evaluation of products (fertiliser, plant varieties)
- Model verification
- Environmental impact monitoring for
 - farms
 - industrial sites (e.g. wastewater disposal)
- Irrigation systems

For more information:

www.grounded.co.nz

Or contact Samuel Dennis:

021 2534315

samuel@grounded.co.nz

