



A NEW AWARD-WINNING SUSTAINABLE FERTILISER SOLUTION FOR FARMERS

Issues & challenges facing Irish agriculture

- New regulation changes expect farmers to be part of environmental solutions.
- Water quality (Nitrogen Action Plan and River Basin Management Plan).
- Nitrogen Use Efficiency (NUE).
- Ammonia fines pending for Ireland for 2017-2021.
- GHG emissions require lower methane and Nitrous Oxide levels.
- Ag Climatise 2020 and Climate Action Plan 2021 targets for Nitrogen reduction are 10% by 2025 and 20% by 2030.

What is the solution?

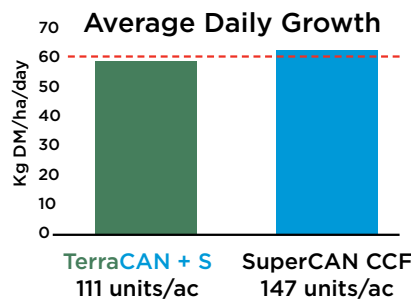
- Improved NUE through the use of the Terra range of products from Target Fertilisers.
- To improve Nitrogen efficiency, Target Fertilisers has teamed up with Brandon Biosciences to research new products that will deliver improved NUE within Irish Agriculture.
- Brandon Biosciences identified a specific molecule PSI 362 which stimulates Nitrogen uptake and utilisation within the plant.
- Target Fertilisers have now developed Terra, a new range of fertiliser products treated with the bio stimulant PSI 362 which specifically increases the assimilation of additional protein and yield in the crop as can be seen in our trials below.



Trial 1: Grazing Trial May - August 2021

Two products compared:

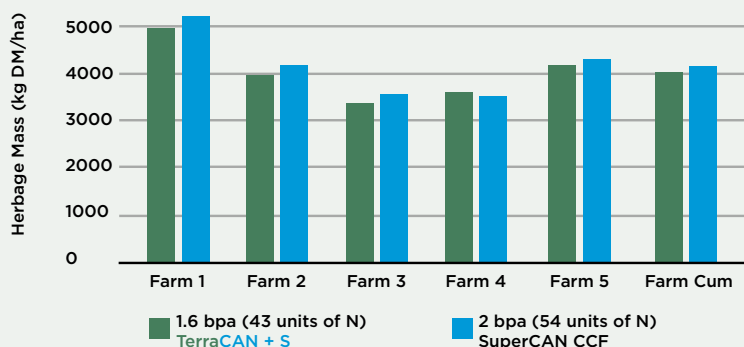
- TerraCAN + S 22N 3S
- SuperCAN CCF 27N 4S



Results

- Note a 24.5% reduction in nitrogen application using the TerraCAN + S (PSI 362 treated).
- The daily growth is similar (as per bar chart) for both TerraCAN + S and SuperCAN.
- This indicates that by using TerraCAN + S, Nitrogen applications can be reduced by up to 25% without compromising yield.

Trial 2: Grass Silage Trials 2020



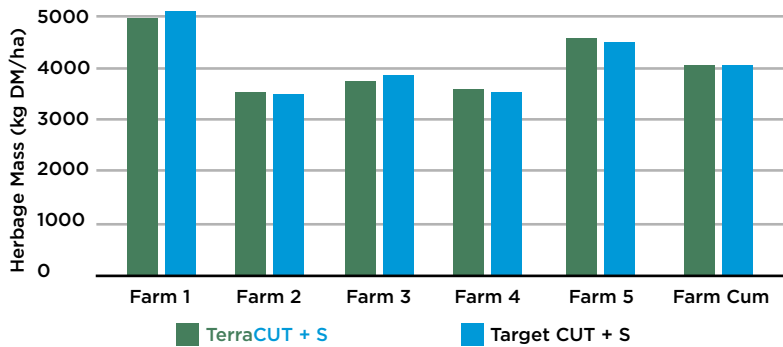
Two products compared :

- TerraCAN + S 27N + 4S
- SuperCAN CCF 27N + 4S

Results

- No major pre-cut yield difference across the 5 farms combined at the 1.6 bags/acre of TerraCAN + S (PSI 362 treated) V's 2 bags/acre of SuperCAN CCF.
- Performance of PSI 362 treated TerraCAN + S at the lower application rate delivered almost the same herbage mass.

Trial 3: Grass Silage Trials 2021



Two products compared :

- TerraCUT + S (20N 2P 12K 2S)
- Target CUT + S (24N 2.5P 10K 2S)

Results

- Fertiliser application averaged 3.2 bags/acre on the five farms over the trial period.
- The grass DM yield on each farm is similar despite the lower nitrogen applied using the TerraCUT + S.
- The average production over the five farms in the trial is 4,068 kg DM/ha for TerraCUT + S and 4,086 kg DM/ha in case of Target CUT + S.
- Note we can reduce the Nitrogen rate considerably when the product is treated with PSI 362.



In Summary

Over the 2 years using both straight Nitrogen and high Nitrogen compounds our results with the Terra range (PSI 362 treated) have shown similar yields of grass when reducing Nitrogen with the Terra range by 20%. This presents a wonderful opportunity to meet climate targets in lowering Nitrogen application using the Terra range, thus benefiting from improved NUE and the additional environmental benefits.

Target Fertilisers Terra Product Range

	N	P	K	S	Mg	Recommended Rate
TerraCAN + S	22	0	0	4	4	1 - 1.5 bags/acre for grazing
TerraGRAZE + S	22	0	5	2	3	1 - 1.5 bags/acre for grazing
TerraCUT + S	20	2	12	2		3.5 - 4 bags/acre for 1st cut silage

N = Nitrogen, P = Phosphorus, K = Potassium, S = Sulphur, Mg = Magnesium.
Bags denote 50 kg bags. Adjust application rates based on slurry.



Scientifically Proven

Peer reviewed paper has been published on TerraCAN used on Barley crops, passed in April 2021 and published by Frontiers in Plant Science in May 2021. Presently, papers are being reviewed on grass and cereal trials and are expected to be published in 2022.

Benefits of the TERRA Product Range

N

Precision extract specific to improving Nitrogen Use Efficiency



Plant multi-level activity; absorption, transportation and utilisation

25%

Lower N required (Up to 25% less N applied due to increased uptake)



Proven results on Irish grass trials



Natural product with no harmful residues

The Terra Product Range is manufactured by Target Fertilisers



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