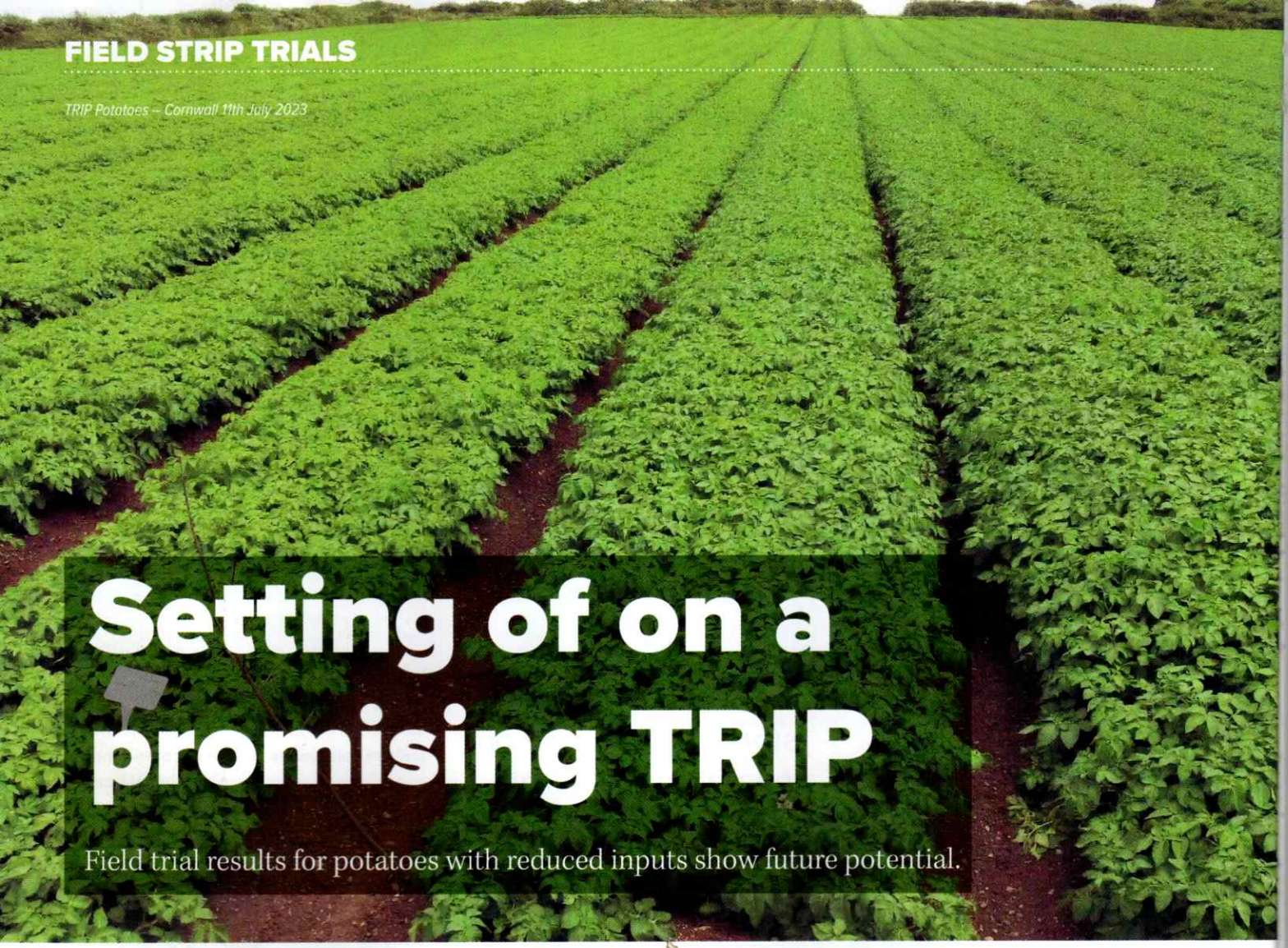


TRIP Potatoes – Cornwall 11th July 2023

Setting of on a promising TRIP

Field trial results for potatoes with reduced inputs show future potential.

RESULTS of the first season's Innovate UK-funded Transformative Reduced Input in Potatoes (TRIP) project have now been released by Emerald Research Ltd (ERL), throwing up five key areas of interest that will now be explored further.

Emerald Research, which specialises in biological solutions and advice, is running farm field strip trials, commercial field-scale trials and replicated pot trials for the project, along with Dyson Farming Research and leading potato growers across the country.

To date, the field trials have been completed at the Cornish and Lancashire sites.

Cornish trial site

The objectives of the Cornish trial were to establish if both soil and foliar applied fungicides can be reduced or eliminated and to establish whether reduced rate seedbed fertilisers or manures could provide commercially-viable yields when supplemented by foliar nutrition and biostimulant combinations.

Five treatment types were applied, with varying results (see treatment summary table).

Treatments 1-5 had an Emerald Research foliar nutrient programme following a full OptiYield® soil analysis and an OptiYield nutrient recommendation programme was implemented.

The base fertilisers were applied to the seedbed - either at 50% or 100% - of Treatments 4, 5 and 6 (Control). Treatments 1 and 2 received only farmyard manure and Treatment 3 received only green waste.

The Green Waste treatment (T3) was not sampled, as the very low level of nitrogen present in the GW was insufficient for realistic growth comparison. Trials next year will probably seek to supplement GW with some additional seedbed nitrogen, or look to apply foliar nitrogen at an earlier stage.

Conclusions and working hypotheses

Following the full statistical analysis of the trial data, there were five areas of interest that will be tested and explored further in the following seasons' replicated trials.

Firstly, the accuracy and validity of Standard Soil Analysis, the OptiYield analysis clearly showed that the soil would significantly lock up soil phosphate leading to greatly reduced availability. The use of full-rate fertiliser using standard soil analysis recommendation, as in

Treatment Summary

Treatment	Base Nutrition	Fungicide & Biological	Foliar Nutrient Programme	Other Foliar
1	FYM (20t/ha)	Maxim + Amistar	Yes	ODX only
2	FYM (20t/ha)	MMXOnly	Yes	ODX only
3	Green Waste	MMXOnly	Yes	ODX only
4	50% Standard	Maxim +Amistar	Yes	Blight programme
5	50% Standard	MMXOnly	Yes	Blight programme
Control	100 standard	Maxim + Amistar	No	Blight programme

Trial compounds: MMX = Mixture beneficial micro-organisms, ODX = Novel biostimulanrfelicitor

the control, considerably under-recommended phosphate, leading to poor crop response in relation to the cost of fertiliser added.

Secondly, the yield results showed that the use of either FYM or half-rate (50%) seedbed fertilisers in combination with foliar fertilisers provided yields equal to, or greater than, the yield from the Farm Standard (conventional) approach.

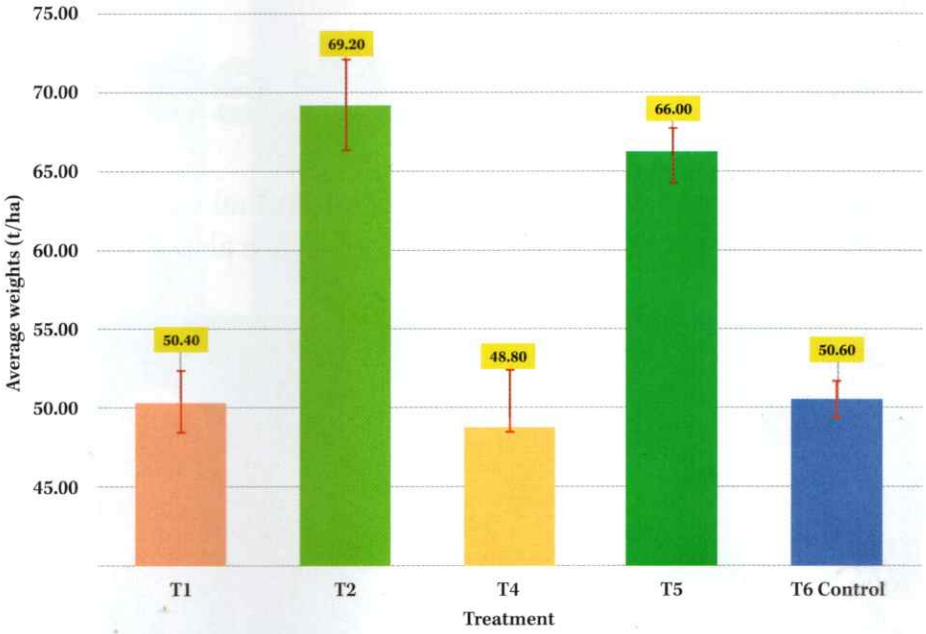
Thirdly, it can be concluded that the substitution of MMX at planting has resulted in a significant increase in overall yield of 33.46% between the groups.

Fourthly, the Cornish trial results supported the previous independent trial work carried out by the University of Bangor over several years, which has shown that the development formulation ODX is both an active biostimulant and a highly active disease resistance elicitor.

Finally, in this trial, two treatments did not receive the standard blight spray fungicidal programme, but ODX only at each "blight spray interval". Despite not receiving any blight spray the crops remained blight-free throughout the season. The variety (Jazzy) is prone to Late Blight and 2023 was a high blight pressure year.

Over the next two trial seasons, the findings of this season's trials will be further tested in multiple locations. Currently the initial results indicate that it is possible to produce a viable commercial crop with fewer inputs. PR

Average Treatment Yields



Trial results

Treatment	Average Dig Weights	Average Count >30mm	Average Count >30mm
T1	2.44 kg	40	30
T2	3.34 kg	44	16
T4	2.60 kg	35	21
T5	3.38 kg	51	15
T6 Control	2.58 kg	36	17


TRIP Test Dig Treatment T2