



# ROOTFiX™ EXTENSIVE

## Key product quality details

- Axenic, sterile carrier inoculant made using Pharmaceutical grade product and filling lines
- Specially selected strains of *Bacillus licheniformis*, *velezensis* and *subtilis* for maximum beneficial effect
- Supplied with 'pre-biotic' seed coating COLOURFiX to stimulate fast bacterial colonisation of the rhizosphere during germination
- High percentage of spores for extended shelf life
- Laboratory and pot trials show broad spectrum effect. Results on soybean, grass, peas and wheat show faster germination and better early vigour/growth. We anticipate similar effect on sunflower but have not as yet tested this.

## Benefits

- Extended survival on seed compared to other bio-stimulant bacteria (more than 7 months).
- Faster germination across several crops types: peas, soybean, wheat, grass.
- Increase in yields tested by in-house germination trials:
  - 30% increase in biomass production in rhizotron grass trials.
  - 10.7% increase in soybean yield on top of Rhizobium inoculant benefit.
  - 3% increase in first wheat trial. Trial compromised by poor plant stand after heavy rains and then drought conditions. Trials being re-done in the UK this year. Target 7% increase in wheat.
  - No trials in sunflower. Planned in Hungary year 2020.



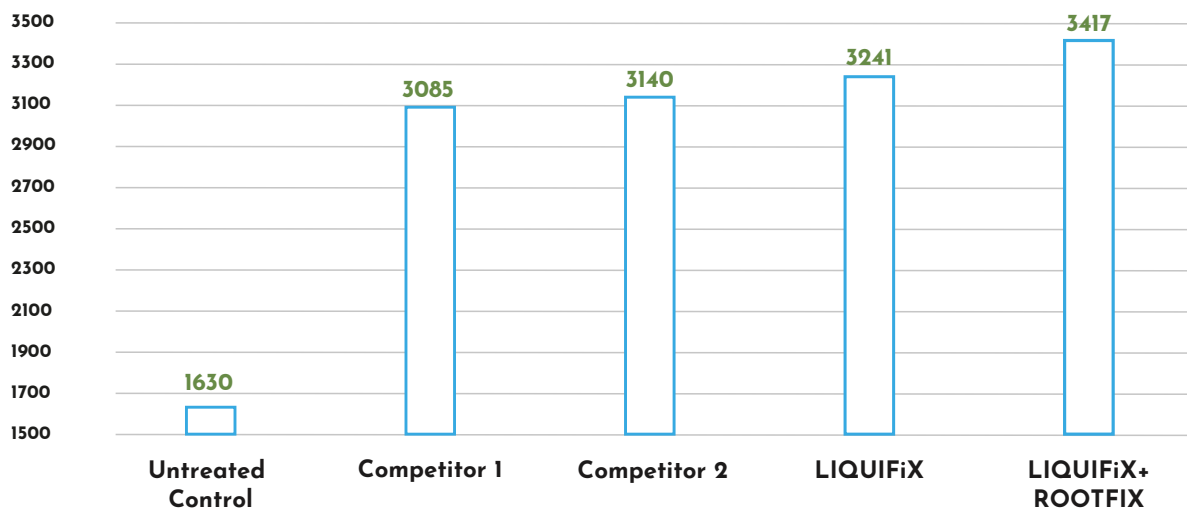
Wheat. In-house germination trials. 2019.



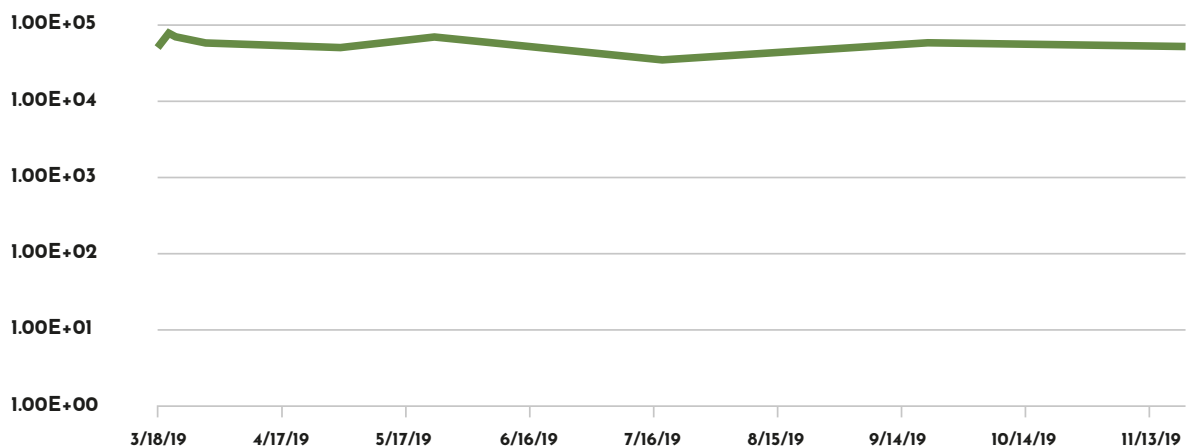
Grass. In-house rhizotron trials. 2019.

## Canada trial results 2017, Soybeans

LTSI SAS Results 2017	% Emergest ct pl/m <sup>2</sup>	pl/m <sup>2</sup> stand ct.	V2 nods mg/pl	V2 nods (5 pl) dry wt.	V2 nods mg/plant	R1/R2 nods nods/pl	R1/R2 nods 5 pldry wt.	R1/R2 nod drywt mg/pl
Untreated Control	100a	50a	0.03c	0.00033c	0.07c	0.9c	0.0332b	6.64b
Peat	98.7a	49.3a	13.17ab	0.23733a	47.5a	36.3ab	0.9422a	188.4a
Liquid	99.0a	49.5a	12.73ab	0.19850ab	39.7ab	32.2ab	0.9481a	189.6a
Liquid+Bacillus	97.7a	48.8a	15.37a	0.19000ab	38.0ab	38.8a	0.9448a	189.0a
Nodulator	98.0a	49.0a	8.37b	0.11600b	23.2b	26.3b	0.7915a	158.3a
Optimize	99.0a	49.5a	9.83b	0.17633ab	35.3ab	29.3ab	0.7700a	154.0a
<b>Pr&gt;F</b>	0,9854	0,9854	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
<b>LSD.05</b>	6,816	3,4	4,963	0,08415	0,084	10,31	0,1965	0,197
<b>C.V %</b>	5,8	5,8	42,0882	46,2316	46,2	31,769	22,3799	22,4



## Rootfix survival on seed, Legume Technology laboratory results



## Rootfix on wheat in Zambia 2019

Seed Treatment	Area	Yield Tons	Ton/ha
Std treatment: Galmano + Rootsure + Active 30/30	43,1	350	8,12
Trial: ROOTFiX Rootsure (Mycorrhiza spp. + Trichoderma Strains)	2,7	22	8,35