

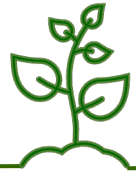
Biostimulants

Laura Bishop

Market Application Specialist

Plant Impact

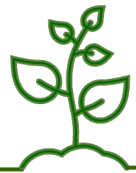
Plant Impact



Biostimulants to
improve crop
production in Africa

Laura Bishop
Technical Manager

Plant Impact facilities and capabilities



Facilities:

Main biological research facility is at the home of Rothamsted Research in the UK, giving access to:

- Glasshouse facilities
- Growth chambers
- Laboratory
- Field trials
- Other specialist facilities

Our chemistry expertise and facilities are based at Cowick, UK

Link into Croda regional R&T centres



Capabilities:

- Expertise in molecular biology, plant physiology and agronomy of horticultural and agricultural crops
- Experienced at generating high quality and robust trial data (trial design, data analysis and interpretation)
- Ability to investigate seed treatments and foliar applications on stressed and non-stressed plants
- Excellent formulation chemistry expertise enabling a range of formulation types




Our range of biostimulant technologies


We develop, make and sell crop biostimulant technologies and specialist nutrition for enhanced crop yield and quality



CaT™ Calcium mobility technology



Symiro™ Yield uplift technology for seed



Alethea™ Anti-stress resistance



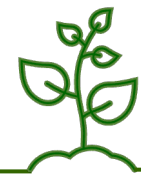
Talsano™ Enhanced plant growth



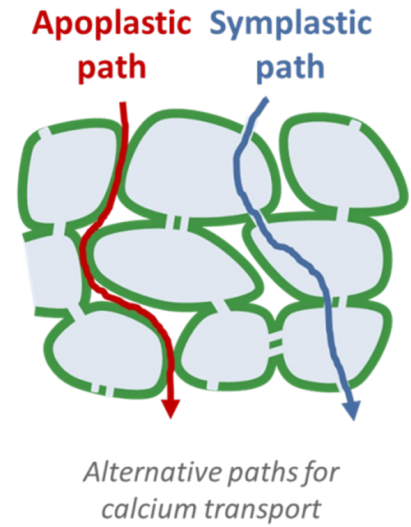
PiNT™ Advanced nitrogen technology



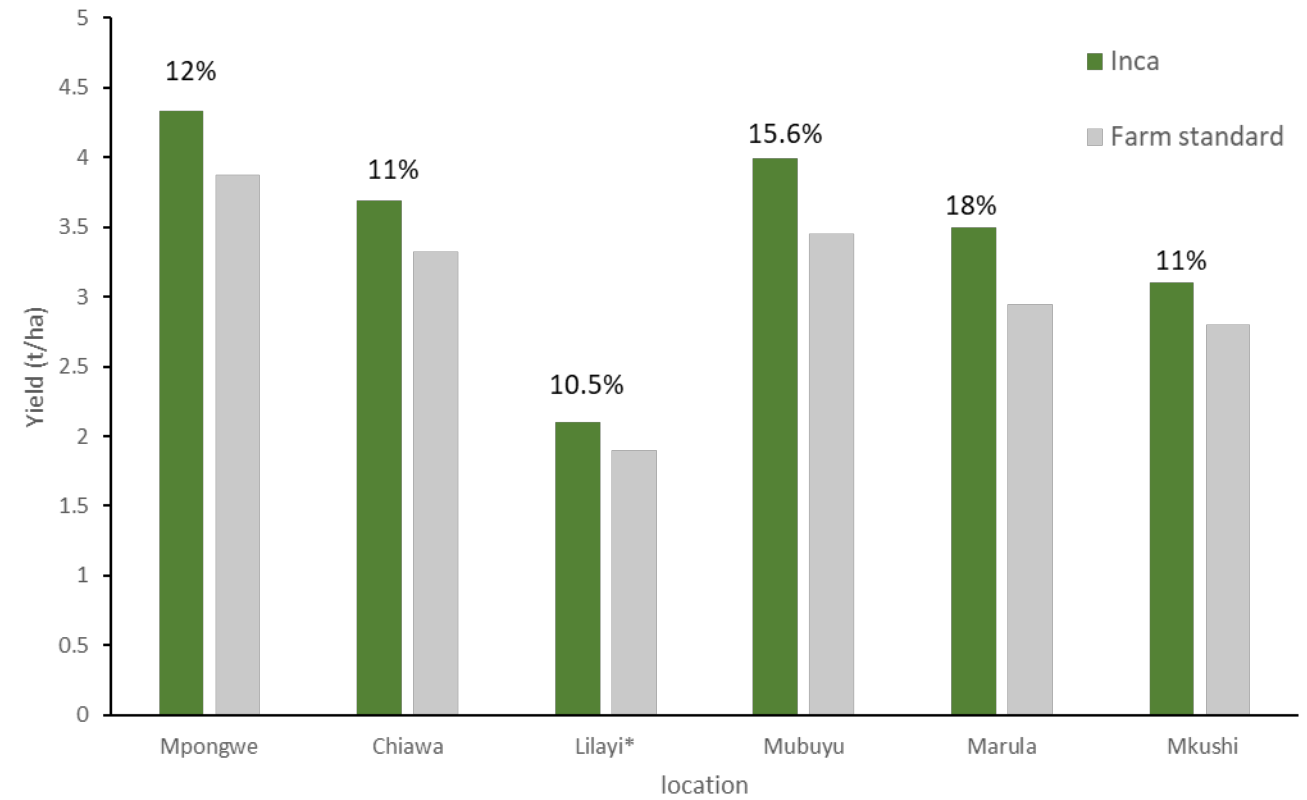
Specialist nutrition



- CaT technology optimises movement and distribution of calcium in plant tissue to help improve crop quality and yield, and reduce the risk of calcium disorders
- Stimulates selective ion transport channels in plant membranes, increasing the concentration of calcium within the cytoplasm of cells
- Applied as a foliar spray which contain calcium and zinc
- Key benefits of CaT:
 - Aids localised calcium movement
 - Provides a more uniform calcium distribution
 - Improves crop quality, storage and shelf life
 - Increases yield



- Effect of CaT technology (InCa) on soybean was validated on 6 independent locations in Zambia
- Application of 1L/Ha at R1 growth stage
- The average yield increase was 13%
- All locations saw an increase in yield (10.5-18%) compared to the current farm standard



*Lilayi Farm had very high Sclerotinia incidence

- Foliar applications of InCa were applied to Blueberries in South Africa
- Application rate of InCa was 1L/Ha applied weekly for 4 weeks (water rate: 520L/Ha)
- There was a 24% increase in pressure in the treated fruit
- Demonstrated to help with the problem with late season fruit in the blueberry production in South Africa.

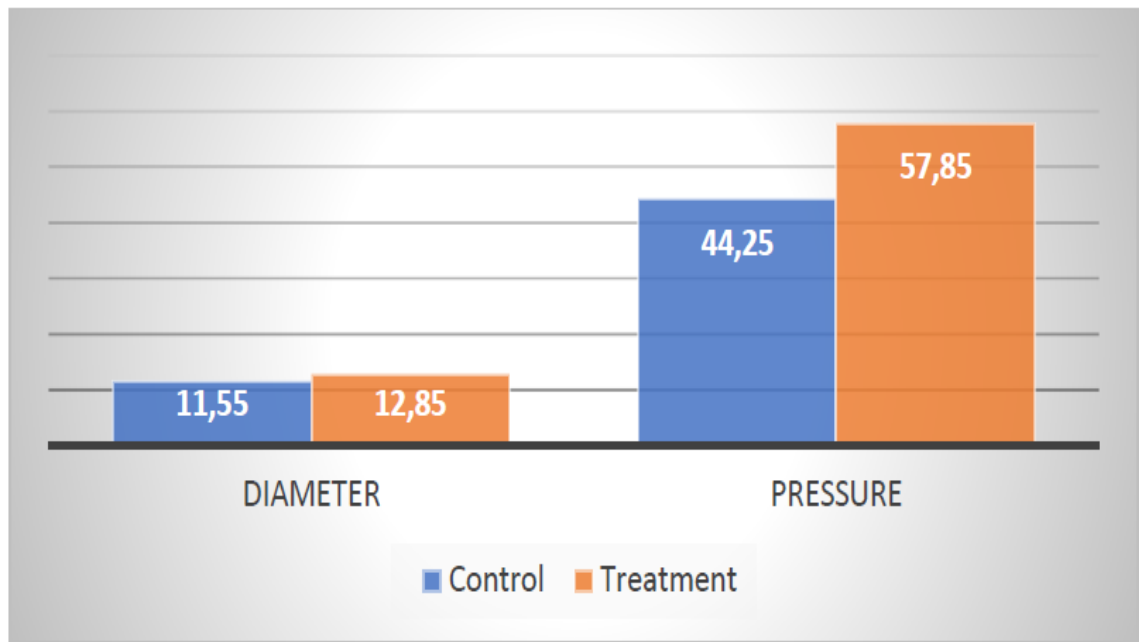


Figure 1.. Fruit diameter and pressure test results taken in field on fresh berries.




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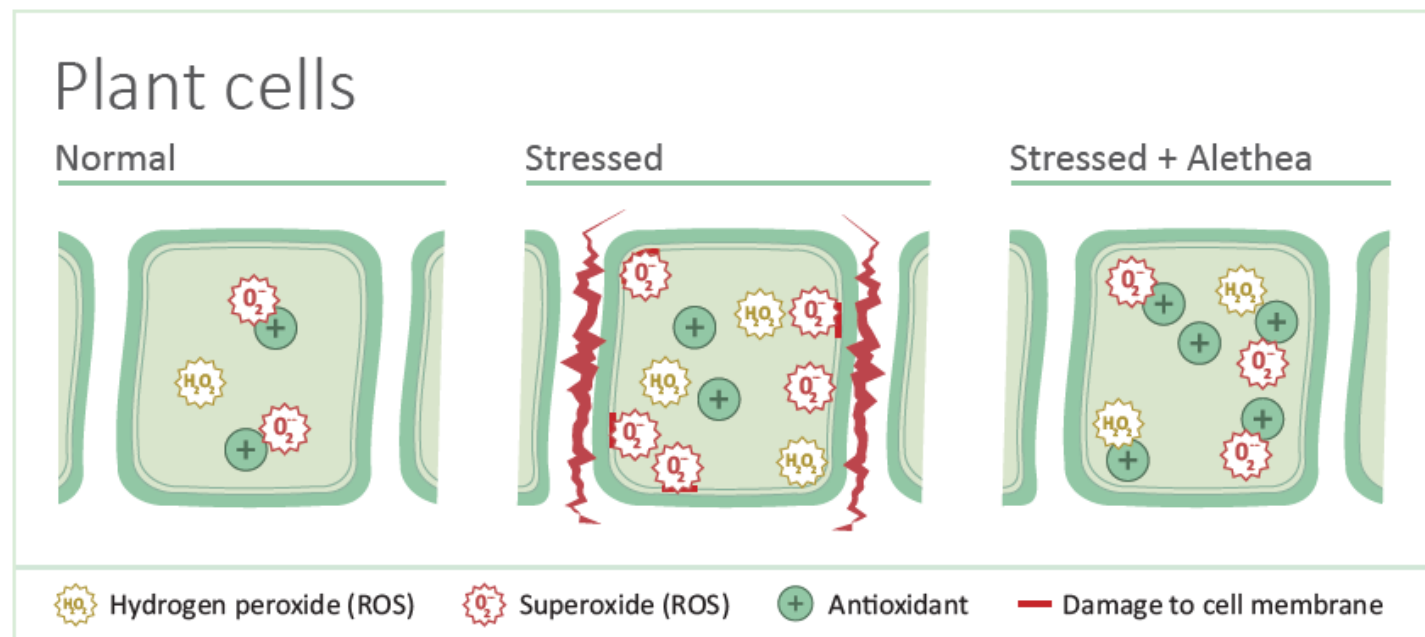
PiNT™ Advanced nitrogen technology

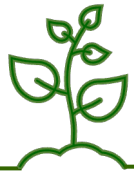


Specialist nutrition



- Plants naturally contain reactive oxygen species (ROS) at low levels and these are neutralised by antioxidants
- Under stressed conditions ROS levels can increase and damage cell membranes
- Alethea contains a novel combination of plant signalling analogues that can cause plants to increase antioxidant production
- More antioxidant activity combats ROS and in doing so helps plants to mitigate the effects of abiotic stress





- Paraquat herbicide damages plants due to the generation of ROS...
- Paraquat was used as a model stress inducer to test for effects of Alethea on antioxidant activity
- Alethea proven to markedly increase antioxidant activity



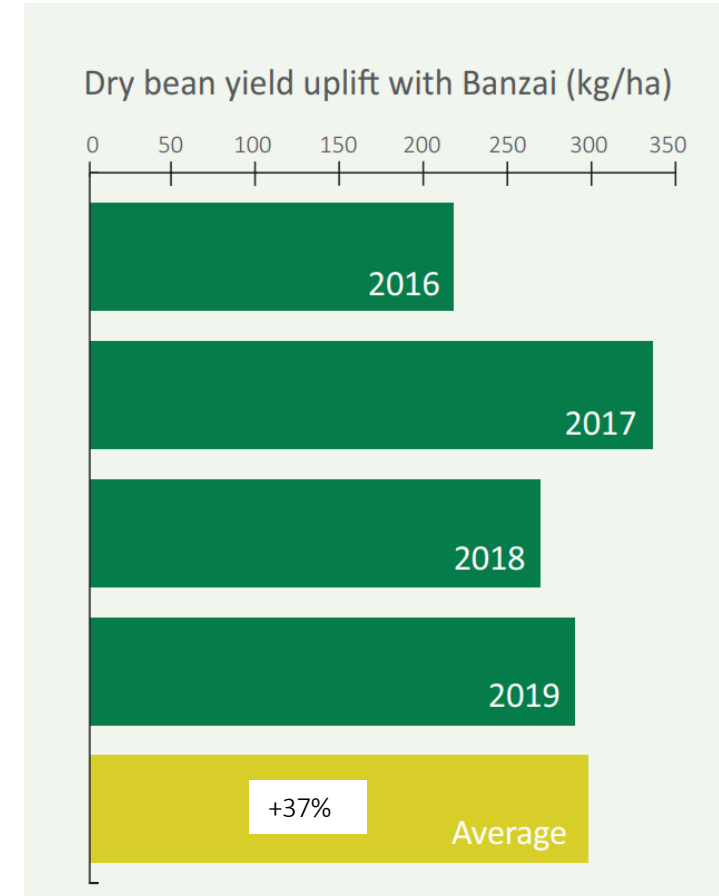
Water then Paraquat
applied after 24 hrs

Alethea then Paraquat
applied after 24 hrs

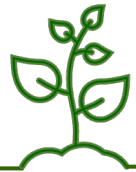
Multi-year testing programme demonstrates consistent yield uplift with



- A total of 202 locations were tested over 4 years in West Africa (mainly Côte d'Ivoire, Ghana, Cameroon)
- This includes both demonstration and R&D replicated trials
- There was a wide range of agronomic practices at the sites, from basic to high inputs (CPP, granular fertiliser, GAP)
- This yield claim has also been validated in Indonesia (36% yield increase)



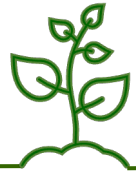
Biostimulants to improve crop production in Africa



- Working closely with distributors in countries across Africa
- Wide range of crops
- Generating high quality field trials data for growers to make decisions
- Demonstrated a significant increase in crop yield and quality in Africa



Plant Impact



Thank you for
your time

Questions?

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