

ENHANCING DROUGHT RESILIENCE OF CROPS WITH SILICON

Silicon is the second most abundant element on the planet, however, it is only bioavailable to plants in its **monosilicic** form. Orion's enhanced **iNHIB™ Technology** provides a source of available silicon to crops, helping to mitigate plant stress.

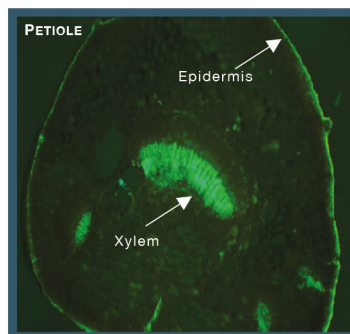
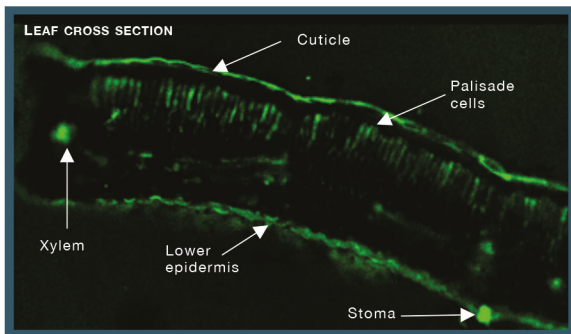
SILICON IS PROVEN TO...



- **Increase Puncture Resistance of Leaves**
 - Enhancing resilience to pest and disease attack
- **Strengthen Cell Walls and Cell Adhesion**
 - Reinforcing vascular bundle
 - Increasing drought tolerance
 - Reducing lodging risk

University investigations have shown how **iNHIB** formulated silicon is accumulated within the Xylem and Stomata.

SILICON ACCUMULATION IN LEAVES AND PETIOLE'S, HIGHLIGHTED USING FLUORESCENT DYE



PHOTOS COURTESY OF THE UNIVERSITY OF HERTFORDSHIRE FOLLOWING APPLICATIONS OF SIRIUS

Accumulation of silicon in the **xylem** strengthens cells to ensure the 'pipes' stay open allowing water and nutrients to move up the plant. Increased silicon in the stomata helps maintain cell turgidity which in turn, reduces excess water loss.

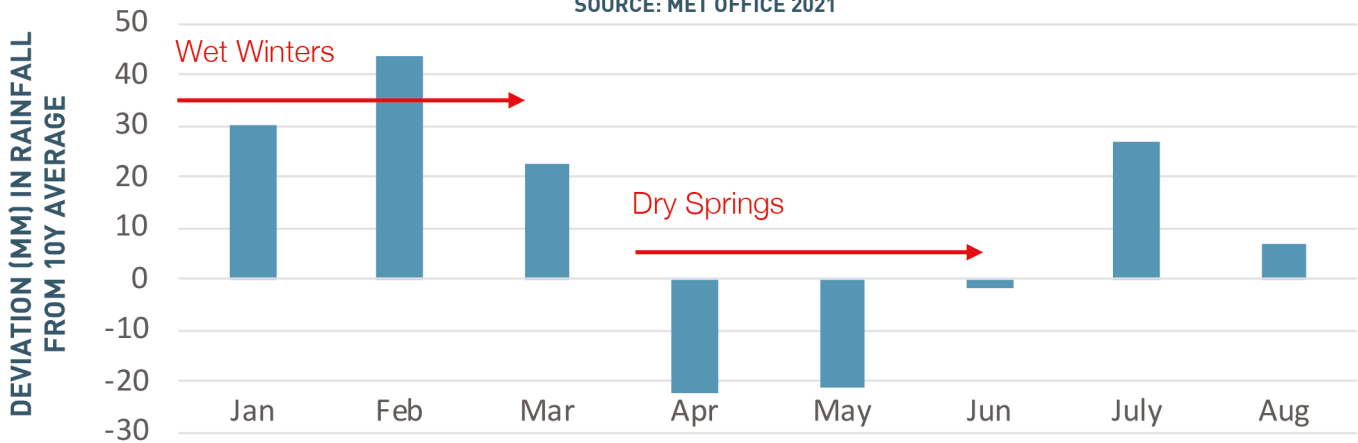


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UK weather patterns are changing, with periods of drought occurring more frequently. Between 2015 and 2020, average monthly rainfall in April, May and June were **below the 10-year average**, indicating an increase in drought stress during critical growing periods.

DEVIATION OF AVERAGE MONTHLY RAINFALL (MM) BETWEEN 2015 & 2020 FROM 10Y AVERAGE

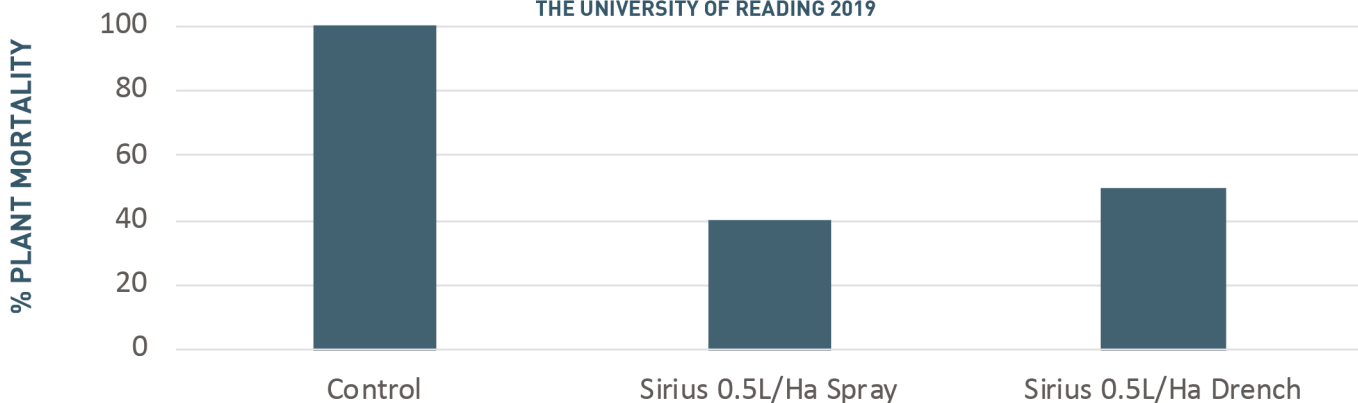
SOURCE: MET OFFICE 2021



Sirius, formulated with **iNHIB Technology**, provides plant-available silicon to crops. Trials have shown this to significantly reduced levels of plant stress and mortality during periods of drought.

DROUGHT TOLERANCE TRIAL

THE UNIVERSITY OF READING 2019



Drought stress can reduce cereal yield from GS31, the point at which grain number is set. Including **Sirius** in **cereal fungicide programs** ensures silicon is accumulated during the reproductive phase of growth, thereby **increasing drought resilience** and **protecting yield**.

Product	Crops	Timing	Rate (l/Ha)	Water Volume (l/Ha)	Maximum Number of Applications
Sirius	All crops	From 2 true leaves	Up to 0.5	100-200	6