



● AGRICULTURE

Faran Sugar Mill Case Study

Hyderabad, Sindh, Pakistan

HydroFLOW® treatment improved maize and sugarcane crop performance when high-TDS underground irrigation water was used in field trials.

14.28%

Maize Yield Increase

19%

Sugarcane Height Increase

8%

Sugarcane Weight Increase

7%

Maize Height Increase

⇌ BEFORE & AFTER

● BEFORE

- High-TDS well water used for crops
- Lower germination with untreated water
- Crop height and weight were limited

● AFTER

- ✓ Treated plots showed better growth
- ✓ Germination improved versus untreated
- ✓ Maize and sugarcane yields improved



OVERVIEW

Faran Sugar Mills Ltd grows maize and sugarcane alongside its refined white sugar operations in Sindh, Pakistan. The site relies on underground irrigation water containing high salt and calcium levels, with TDS readings of 2000–2400. Trials compared untreated underground water, HydroFLOW® treated water and higher quality Sindh River canal water used as a benchmark.



CHALLENGE

High-TDS underground water affected germination, crop growth and yield potential.

- Underground irrigation water had high salt and calcium levels
- TDS levels were around 2000-2400
- Canal water was not normally available for comparison plots
- Poor germination reduced crop growth and yield

SOLUTION

HydroFLOW® treatment was installed at the well discharge for maize and sugarcane underground irrigation trials.

UNIT INSTALLED

HydroFLOW® unit

CROP TYPES

Maize and sugarcane

WATER QUALITY

Underground water, 2000-2400 TDS

TRIAL DURATION

89 days maize, 98 days sugarcane

RESULTS

14.28% Maize Yield Gain

Yield increased from 60Kg to 70kg per plot.

7% Maize Height Increase

Maize grew 7% taller than untreated plots.

8% Sugarcane Weight Gain

Weight increased from 3190g to 3465g.

19% Sugarcane Height Gain

Sugarcane grew 19% taller than untreated plots.

Better Germination

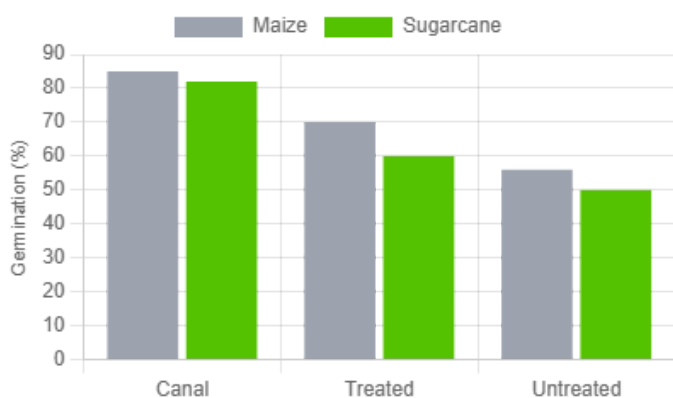
Higher germination in treated maize plots.

Improved Crop Growth

Leaf width and stem girth improved.

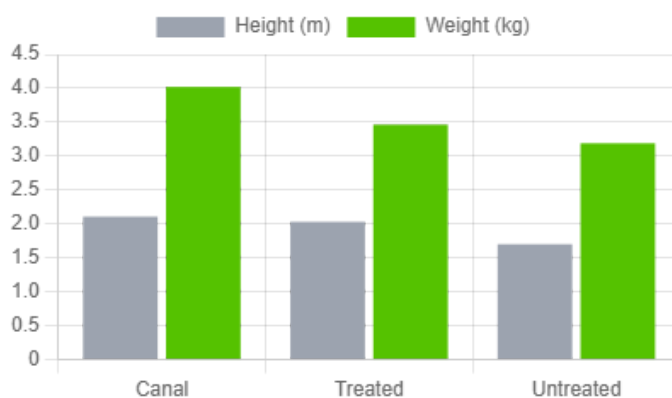
GRAPHS

Germination Comparison (%)



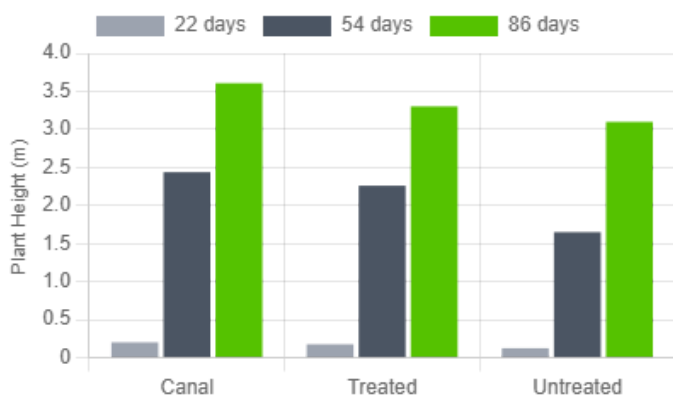
Treated plots showed higher germination than untreated plots.

Sugarcane Trial Results



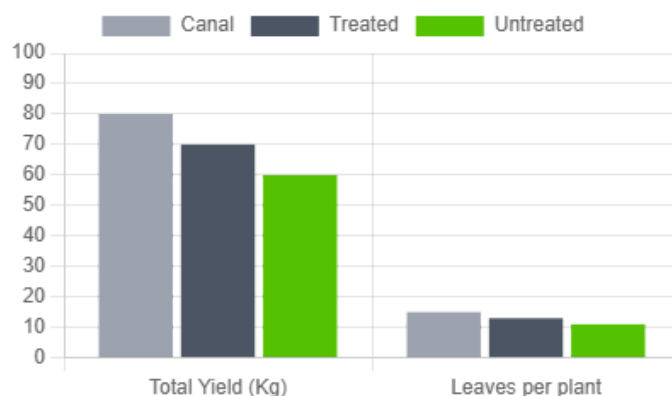
Treated achieved higher height & weight than untreated crops.

Maize Height During Trial



Treated maize was taller than untreated maize at each observation.

Maize Trial Results



Treated showed higher yield and growth than untreated plots.

Faran Sugar Mills Ltd tested *HydroFLOW*® treatment on maize and sugarcane crops irrigated with high-TDS underground water. Treated water improved germination and crop performance compared with untreated groundwater. Maize yield increased by 14.28% and height by 7%, while sugarcane weight increased by 8% and height by 19%. Results demonstrated that *HydroFLOW*® treatment can support crop growth where higher quality canal water is unavailable.

14.28%

MAIZE YIELD INCREASE

19%

SUGARCANE HEIGHT GAIN

7%

MAIZE HEIGHT INCREASE

RELATED CASE STUDY

Long Stem Rose Growth Case Study

South America

Hydropath technology was applied to a long stem rose growing operation in South America, improving stem growth during cold season months. Average stem length increased from 42.3cm to 45.9cm and the ratio of premium 50cm stems improved significantly.

Longer Stems

Average stem length increased from 42.3cm to 45.9cm over the trial

Stronger Growth

Improved stem strengthening and plant propagation throughout the season

Organic Certified

Certified for use in organic agriculture by Washington State Dept.