

UNLOCK YOUR SOIL'S BIOLOGICAL POTENTIAL

# Forage Sorghum

**Return on Investment \$394/ha = 179:1**

**Prussic Acid & Nitrate Toxicity reduced to safe levels**



**Goal:** To assess the effectiveness of Sabel-X Cereal in delivering:

1. A measurable production advantage for summer growing fodder systems.
2. A measurable reduction in stress traits that cause higher levels of Prussic acid and Nitrate, potentially rendering the fodder unusable and toxic to animals.

**Sabel-X Trichoderma** - are unique Trichoderma on the market as they live inside the plant and interact directly with the gene expression of the plant, switching on more genes than the plant alone is able to switch on. They provide multiple benefits to improve crop performance including helping the plant under stress.

## Breakthrough technology to unlock soil's biological potential

Crops need beneficial microbes in the rhizosphere (root zone) to thrive.

Sabel-X Trichoderma create signals to switch on genes that activate these beneficial microbes, attracting more of them to the rhizosphere. Once there they multiply as the plant feeds them.

The microbe groups activated by Sabel-X Trichoderma are focused on keeping the plant in an optimal state of photosynthesis and health, particularly when the crop is under stress.

Plants get more from the soil when inoculated with Sabel-X Trichoderma. The results speak for themselves with this trial being no exception.

## Features of Sabel-X

- More robust and vigorous root systems
- Increased crop tolerance to stresses (biotic & abiotic)
- Increased plant nutrient use efficiency
- Cost effective dry seed treatment
- Compatible with seed treatments

### Trial Details:

8 varieties of Forage Sorghum with a total trial area of 3.5 hectares in QLD.

30 replicates of each variety were applied.

Application Rate: Sabel-X Cereal as dry seed dressing at 60g/25kg seed sprinkled on top of seed in the seed box.

Planting Rate of sorghum for all 8 varieties was 6kg/hectare.

Situation - dryland cropping.

Assessment at each plant cut.

## RESULTS - YIELD INCREASE - 24.32%

### Final yield as cut silage

Sabel-X Cereals	23,695.49kg/ha
Control	19,060.42kg/ha
<b>% increase</b>	<b>24.32% increase</b>

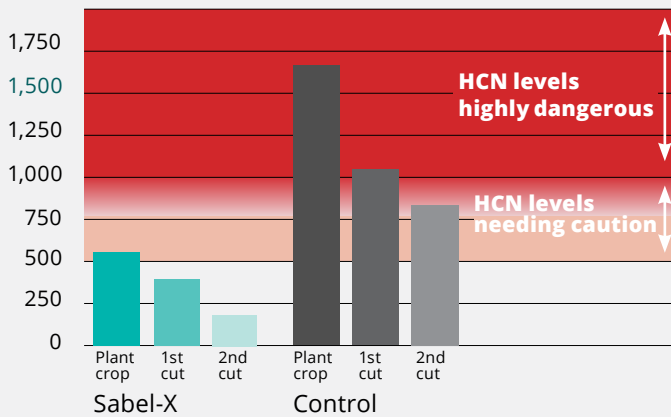
<b>Return on Investment:</b>	<b>\$393.98</b>
ROI proportion	179.1:1
Planting rate	6kg/ha
Cost of Sabel-X	\$4.46/h @ 14.4g/ha

**RESULTS - QUALITY - REDUCED TOXICITY**

Prussic Acid (HCN) accumulation and Nitrate Toxicity are the two biggest stock feeding constraints for graziers using sorghum.

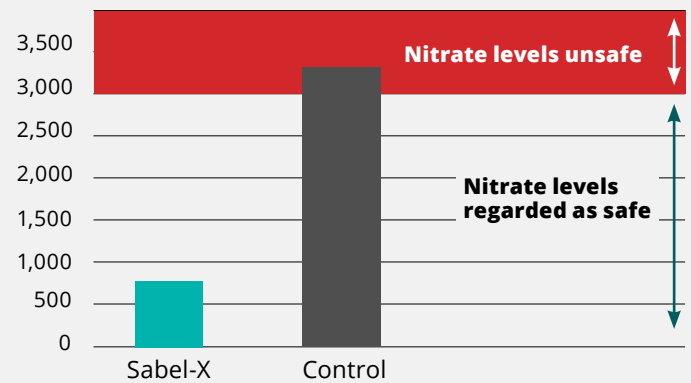
Sabel-X reduced these two toxins to safe levels compared with the control that remained at unsafe levels.

**Prussic Acid reduction using Sabel-X by an average of 67%**



HCN (Prussic Acid) results - average of all varieties ppm dry plant tissue

**Nitrate Toxicity reduction using Sabel-X by an average of 70%**



KNO<sub>3</sub> results average of all varieties ppm dry plant tissue for 2nd and final cut

**How Sabel-X reduces Prussic Acid and Nitrate Toxicity levels**

Sorghum crops in Queensland experience perennial environmental stresses including moisture, dry winds, drought.

Environmental stressors force the plant to focus on survival, building up HCN and nitrate levels because it doesn't have the energy reserves to regulate HCN or convert nitrate into ammonium.

The untreated control has HCN and Nitrate levels at unsafe levels demonstrating it was under stress.

The Sabel-X treatment does not have HCN build up or unsafe nitrate levels, demonstrating these treated plants were more tolerant of the stresses affecting the control plants.

Sabel-X helps the plant tolerate stress events by interacting directly with the gene expression within the plant in a number of ways including improving the biology around the root system to enhance root health, and water and nutrient uptake. The result is a less stressed plant that has enough energy to regulate HCN levels and convert nitrates to plant available nitrogen.



4 weeks post emergence root electromagnetic imagery shows Trichoderma inside the plant.



Trial site



Trial site