ROAM TECHNOLOGY
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» CASE STUDY



PREVENTING TOBRFV & BIOFILM: A SUCCESSFUL GREENHOUSE DISINFECTION APPROACH

DISINFECT | Horticulture

ToBRFV continues to pose a serious threat to tomato cultivation worldwide. In this case study a tomato grower faced significant challenges due to a contaminated irrigation system and the presence of the Tomato Brown Rugose Fruit Virus. Since the virus is difficult to control or eradicate, prevention is critical within a greenhouse.

THE CHALLENGE

The presence of ToBRFV in this grower's cultivation caused approximately 40% crop loss. Additionally, the irrigation system was heavily contaminated with biofilm and algae, which affected the quality of the irrigation water and caused severe blockages. At the end of the season 50% of the irrigation system, which consisted of CNLs and drip pens, was clogged.



Fig. 1: Crop infected with ToBRFV



Fig. 2: Clogged CNL

OUR SOLUTION

Since there is no cure for ToBRFV, prevention is key. This is why our stabilised hydrogen peroxide, **Huwa-San TR-50**, was implemented into a crop rotation protocol to prevent the virus from spreading to the next crop cycle. While doing this, we also aimed to unclog the irrigation system, so the grower would not need to replace the driplines.

THE BENEFITS

- **Effectively removes and prevents biofilm**
- **Prevents the spread of harmful pathogens and diseases**
- **Advanced root growth**
- **Provides oxygen rich water**

RECOMMENDED PRODUCT



Advanced water hygiene

No rinse surface disinfection

H_2O O_2

No harmful residuals

Biofilm removal

We used the following method:

Approach	Dose (%)	Contact time
Flushing the irrigation system to remove organic deposits (biofilm, algae, residues from organic fertilisers used during the previous crop cycle). The pipes must be filled completely with the Huwa-San solution for the best results.	1%	24h
Disinfection of the greenhouse surfaces & equipment (spraying)	4%	At least 15min
Disinfection of the water silos (spraying)	6%	At least 15min
Immersion of drip pens and small tools	2%	At least 15min
Substrate disinfection (re-using the same slabs)	1%	48h

Once the plants were brought into the greenhouse, we started continuously dosing 60ppm **Huwa-San TR-50** in every irrigation cycle and flushing the lines once a week. In doing so, we kept the system clean, effectively disinfected the irrigation water, and promoted root growth as a barrier against ToBRFV.



Fig. 3: Irrigation lines before flushing with Huwa-San TR-50

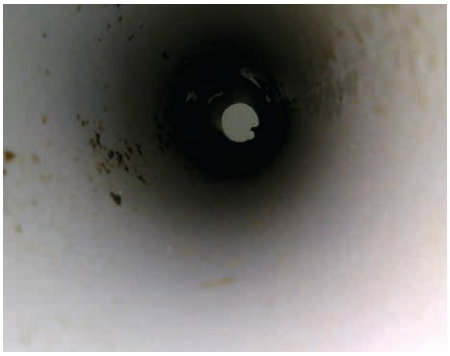


Fig. 4: Irrigation lines after flushing with Huwa-San TR-50



Fig. 5: Enhaced root growth after using Huwa-San TR-50

CONCLUSION

During this crop rotation **Huwa-San TR-50** was able to thoroughly remove the biofilm from the irrigation system, restoring its optimum function. The increased oxygen levels in the water, as a result of **Huwa-San TR-50**'s stabilising properties, contributed to enhanced root growth. We were able to prevent ToBRFV from being transferred onto the next crop. The crop in the next season, following the implemented crop rotation protocol, was free of ToBRFV. Our approach ensured thorough disinfection and helped the grower avoid costly replacements of irrigation lines.

Additionally, the grower did not have to rinse off Huwa-San with fresh water after surface disinfection, which allowed them to decrease their labour expenses and save time during crop rotation.



Fig. 5: Crop free of ToBRFV after using Huwa-San

Huwa-San is a biocide and subject to certain laws and regulations per country. As a result, in some countries, our full range isn't available. Please contact us for more information on our registrations. Use biocides safely. Read the label carefully before usage.

HQ » I.Z. Poort Genk 6835 - Geleenlaan 24 - 3600 Genk - Belgium - +32 89 44 00 42
Sales office » Schoebroekstraat 40 - 3583 Paal - Belgium » **www.roamtechnology.com**