

Case Study 2025-10-24

Tomatoes

Elleholmstomater, Sweden

Letavis AB is a Swedish Biotech firm founded by Gustav Nadal and Ingemar Pongratz. The vision of Letavis is to develop efficient, safe, climate and environmentally safe products for the agricultural sector.

Letavis has developed the biostimulant Amoravis™ which is based on the Oxytocin peptide. The active compound in Amoravis™ has growth promoting effects in plants. The effect of Oxytocin on plants was initially identified by Prof Kerstin Uvnäs Moberg. Amoravis™ has demonstrated strong potential in agriculture. Letavis has patent protected the effects of oxytocin in plants in the main agricultural market.

Letavis has initiated the commercialisation of Amoravis™, starting with potatoes. We have shown that treatment of seed-potatoes immediately before sowing with low concentrations of Amoravis™ results in a robust increased in the potato harvest with around 20-25% depending on the potato variety. Furthermore, we are currently performing a large-scale test on herbs and salads grown hydroponically indoors in greenhouse environment. The aim is to establish a long-term commercial relationship between FamiFarm and Letavis. This case study was performed on Dill and Basil seeds as well; the results are presented elsewhere.

Letavis has also started the process to commercialize Amoravis™ in tomatoes. For this purpose, we performed a pilot test to assess the effects of Amoravis™ on tomato crop yields. This pilot experiment was performed at Elleholm Tomater, a Swedish tomato producer located in south of Sweden (Scania Region).

Tomatoes represent a huge agricultural market. Recent estimates suggest that tomatoe production in 2024 reached 186 metric tonnes, with an approximate commercial value of 100 billion EUR, where fresh tomatoes represent a 60% share of the market and processed tomatoes make up the remaining 40%. The main largest producers are China and India. Turkey, the US and Egypt are large producers as well. The combined EU market is estimated at 15 billion where the largest individual countries are Spain, Italy, Holland and France.

There are thousands of different tomato varieties. The main tomato categories are:

Categories	Use	Examples
Slicing tomatoes	Used in salads and sandwiches	Beefstake, Big
Cherry Tomatoes	Small and sweet	Sweet 100, Sun Gold, Black cherry
Plum Tomatoes	Oval for sauces and pastes	Roma, San Marzano
Heirloom Tomatoes	Open pollinated varieties	Brandywinem Cherokee Purple
Green Tomatoes	Unripe used in cooking	Green Zebra Aunt's Ruby Green
Grape Tomato	Small used for snacking	

Tomatoes are rich in different vitamins, such as Vitamin C and Vitamin K are strong antioxidants that promote immune functions and improve iron uptake from plants, promote bone health, among others. In addition, tomatoes are rich in Lycopene, Carotene, and Flavonoids like Quercetin. Taken together, tomatoes represent a rich source of beneficial compounds with well documented beneficial health effects.

Tomato production: Typically, commercial tomato production relies on grafting methodology. This method relies on the tomato plant (the scion) being introduced (grafted) into a rootstock. Grafting techniques provides key advantages such as increase resistance to soil borne diseases, viruses and pests, and the rootstock leads to better growth, higher yields and longer fruiting season.

Tamato plants grown from seeds are still used, but the target group is mostly for home use. Rootstocks such as Maxiforte have been specifically developed to provide disease resistance (Fusarium, Nematodes and other plant pests) whereas the scion provides the selected variety.

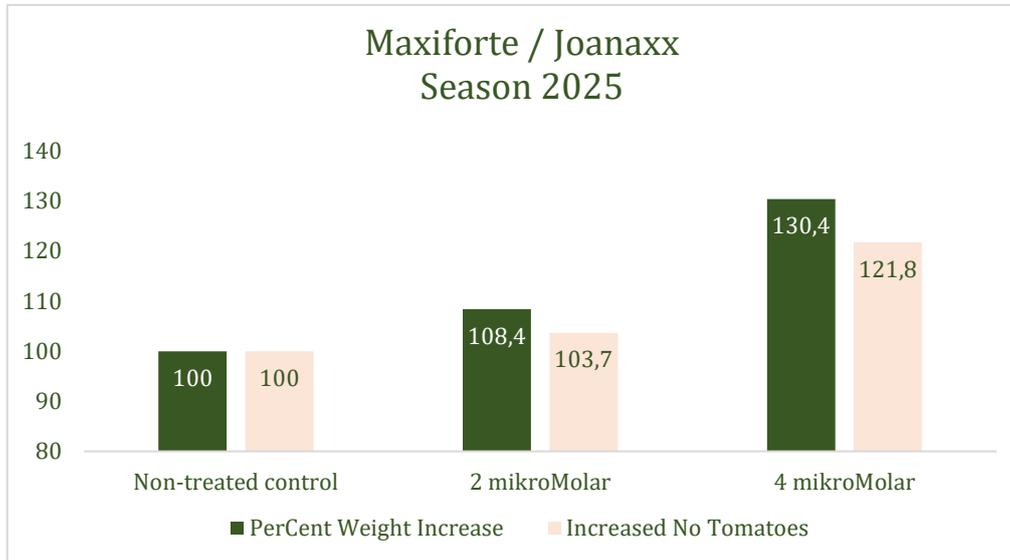
Treatment

Amoravis was delivered to JH-Planter (Denmark) as a powder, and it was mixed with water just before the start of the experiment according to separate instructions provided by Letavis. For treatment, seeds were placed on the medium and watered only with Water (control) 2 microMolar AmoravisTM and 4 micromolar AmoravisTM.

- **Treatment start:** 2024-12-24 (Scion) Joanexx
- **Seed:** 2025-12-25

Results:

The pilot test performed during 2025 at Elleholms was performed as follows. Joanaxx seeds were treated overnight with 2 different Amoravis™ concentrations.



After this growth time, cuttings were grafted into Maxiforte Rootstock. The graft was allowed to heal and then grafted plants were subsequently transferred to Elleholm.

- Tomato Harvest start:
- Tomato Harvest end:
- Total yield control plant: 21,4
- Total yield 2 mikroMolar: 23,2 kg
- Total yield 4 mikroMolar: 27,9 kg
- Total No. Tomatoes control: 188
- Total No. Tomatoes 2 mikroMolar: 195
- Total No. Tomatoes 4 mikroMolar: 229

Throughout the season the plants treated with Amoravis™ display a robust increase in both number of tomatoes and weight of tomatoes.

In average the weight yield increase was substantial, over 30% whereas the number of tomatoes was also considerably higher. This results strongly suggest that Amoravis™ will substantially increase yield and the profitability for the producers. This test will be followed up in 2026 with a much larger pilot test, where the number of treated plants will increase from 218 to over 4000 plants.