



Symactiv

Jucker
FARM

Quantifying the Impact of Soil Biology on Crop Performance

Symactiv x Vivent Biosignals x Jucker Farm AG

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“Using Vivent’s solution, we could see when and why our biostimulant makes a difference. We were delighted to get quantified evidence of the benefits in water and nutrient status for crops treated with Symactiv.”

Philippe Schläpfer, Symactiv Co-founder and CTO

Symactiv is a Swiss biostimulant provider focused on restoring soil biology to turn depleted soils into productive, resilient growing systems. By rebuilding biological balance underground, Symactiv helps crops access water and nutrients more efficiently, delivering consistent performance year after year.

Jucker Farm AG, located near Pfäffikersee in Switzerland, is a progressive vegetable producer growing potatoes and tomatoes under demanding climatic conditions. Like many growers, Jucker Farm continuously evaluates new agronomic solutions that can improve crop resilience and input efficiency without adding operational complexity.

AGRONOMIC CHALLENGE

Despite implementing regenerative practices and maintaining soils in good apparent condition, the farm faced several persistent challenges according to standard crop analysis:

- **Crops were not growing as strongly or consistently as expected**
- **Soils showed room for improvement in terms of biological activity and structure**
- **Yields and plant resilience were not keeping pace with increasing effort and input costs**
- **More inputs did not reliably translate into better outcomes**

OUR APPROACH

To objectively quantify the impact of Symactiv’s soil enhancer, we deployed Vivent’s plant-based sensing technology directly in the field.

Across **potato and tomato trials**, Vivent plant sensors were installed in:

- Fields managed under the farmer’s **current best practice (control)**
- Adjacent fields treated with **Symactiv biostimulant**

Rather than relying solely on yield or visual assessments, Vivent Biosignals continuously monitored:

- **Plant Balance Index (PBI) – a real-time indicator of plant adaptation and stress**
- **Water status**
- **Nutrient uptake dynamics**
- **Responses to temperature, humidity, and extreme weather**

This approach allowed Symactiv and the farmer to compare treatments under identical environmental conditions, isolating the biological effect of the biostimulant.

RESULTS AND CLIENT BENEFITS

Improved Plant Stability and Resilience

- In both potatoes and tomatoes, Symactiv-treated plants spent ~7% more time in the optimal Plant Balance range
- Treated plants adapted faster and more consistently to cold, wet, hot, and dry periods
- Differences became most pronounced during weather stress and extreme conditions, where resilience matters most

Better Water Status Under Stress

- Symactiv-treated crops showed better water status during high temperatures and low humidity
- Improvements were especially visible during prolonged warm and dry periods, when untreated plants became less stable

Enhanced Nutrient Uptake

- In potatoes, treated plants showed higher Calcium and Phosphorus availability, particularly from mid-season onwards
- In tomatoes, Nitrogen, Phosphorus, and Potassium status improved significantly in treated plants from mid-August
- Nutrient uptake was strongest under cooler and wetter conditions, aligning with Symactiv's soil-biology-driven mode of action



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“Symactiv turns good ideas into practical, field-ready solutions. It fits seamlessly into our operations and has real potential for broader adoption.”

MARTIN JUCKER
JUCKER FARM AG

Jucker
FARM

CASE STUDY

FROM CLAIMS TO QUANTIFIED PROOF

For Symactiv, these trials provided independent, plant-level evidence explaining why and when their biostimulant delivers value — strengthening both product development and customer communication. Treated plants showed substantial **yield increases of approximately 15%** compared to untreated plants for these specific crop cycles.

For Jucker Farm, the results validated Symactiv as a practical, field-ready solution that integrates seamlessly into existing operations while improving crop resilience.

WHY IT MATTERS

This collaboration demonstrates how plant-based biosignal monitoring enables biostimulant providers and growers to move beyond trial-and-error toward evidence-driven agronomy.

By letting plants themselves report on stress, water, and nutrient dynamics, Vivent helps partners like Symactiv:

- Prove product performance under real conditions
- Optimize recommendations
- Accelerate adoption with confidence

Plants know best — and now they can show it.

Vivent Biosignals connects biostimulant companies, farmers, and advisors through real-time crop health insights. See how crops respond, optimise products and practices, and make more confident decisions, based on plant data, not guesswork.

Let's connect to explore the future of agriculture together!
Plants are talking, we let you listen in.