

RWTH Aachen University – Spin-Off

# Agronostics Aachen Cutting-Edge Priming Agents and Innovative Candidate Compound Screening Services

## Background

*Agronostics Aachen* will be an innovative agricultural chemistry start-up operating in the growth market of **plant defense priming**. Primed plants show enhanced resistance to disease and pests, and increased tolerance to abiotic stress. Taking into account that these threats still destroy ~40% of possible crop yield, defense priming provides a unique opportunity to secure best possible yield.

On the background of a steadily rising world population and an increasingly detrimental climate, improving plant health is one of today's most pressing issues in plant production. On top of that, consumer acceptance of genetically modified (GM) crops is low in Europe. Thus, defense priming and its innovative mode of action, is becoming a major focus of investment in the EU's agrochemical industries. However, currently available priming compounds often have serious drawbacks such as insufficient tolerability, reduced plant fitness or inadequate effectiveness.

Two experts at RWTH Aachen University, who are working at the forefront of priming research and acting as counselors to *Agronostics Aachen*, are now about to take defense priming to another level. In an interdisciplinary research effort they invented innovative screening assays representing powerful tools for identifying next-generation priming compounds.

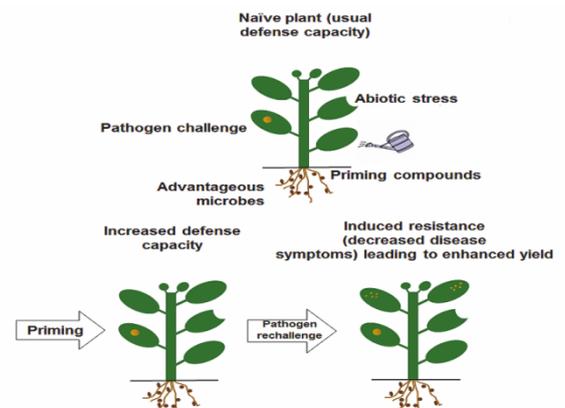
## Business Model

*Agronostics Aachen* will operate with two distinct, yet closely related, business divisions: "**Agents**" and "**Services**". ***Agronostics Services*** will offer testing of candidate priming compounds using an innovative two-tier screening assay: candidate substances are initially pre-screened for their effect on a unique combination of signals (patent application filed in August 2014). Alternatively or in addition, candidates for priming compounds will be tested in a direct system that is based on epigenetics – the future gold standard of priming tests (patent application filed in August 2013). Together, this two-tier approach allows the testing of priming candidates with unprecedented precision at reasonable speed.

***Agronostics Agents*** will provide cutting-edge priming compounds featuring high reliability and very low impact on plant fitness for a variety of agricultural crops. Upon treatment with *Agronostics'* priming compounds, crops are well prepared for a range of environmental challenges including extreme weather conditions such as drought and cold. A boost of your yield in times of threat and challenge! Self-evidently, the products are GM free. Moreover, due to their cutting-edge mode of action, *Agronostics* priming agents will provide the most durable effect currently available.

## Agronostics Aachen at a glance

- ✓ **Services:** Innovative screening systems for priming agents based on a fine-tuned two-tier approach: intracellular markers combined with direct epigenetic assay
- ✓ Priming candidate compound testing with unprecedented precision at reasonable speed
- ✓ **Agents:** Priming compounds featuring high reliability, durability and very low impact on plant fitness for a variety of agricultural crops
- ✓ Protection against a wide range of environmental challenges - diseases, pests, and extreme weather conditions such as draught and cold.
- ✓ Natural or near-natural priming agents



Overview of the "priming" process. Natural or near-natural priming agents induce a "primed" state of defense, in which plants can induce faster and more robust defense responses leading to a higher yield (Adopted from: Conrath, Priming of Induced Plant Defense Responses, *Advances in Botanical Research*, Vol. 51).

## Patent portfolio

Several patent applications were filed on the technology: PCT/EP2015/069593, EP 14 731 582.4, US 14/899,344.

## Collaboration and Partnering

The Technology Transfer Office at RWTH Aachen University, in close partnership with the Technologie-Lizenz-Büro (TLB) GmbH, is in charge with nurturing *Agronostics Aachen* in its start-up phase. We are pleased to evaluate ideas for collaboration.

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