CROPCISION
AGRICULTURAL TECHNOLOGIES

Precision fertilizer technology for farms, forests and greenhouses

Market need and potential

Food security can no longer rest on a bedrock of wasteful, fossil fuel-based fertilizer that create the environmental risk of leaching into aquatic ecosystems and causing eutrophication. Farmers have told us that fertilizer cost is their greatest management challenge going into the 2023 season, while market leaders concede that in the past they have lacked commercial incentive to invest in scalable, enhanced efficiency fertilizers fit for precision agriculture. Macro supply constraints now present win-win conditions for both producers and farmers.
In the absence of innovation, the EU Farm to Fork strategy will directly lead to an estimated 12% reduction in EU farm productivity and consequently impact food affordability for consumers.
Conventional and specialty control release fertilizers currently on the market cannot be recommended for precision placement because they introduce salt stress, disrupt seed hydration and germination or reduce water uptake by roots.

Business idea

Cropcision offers a step-change enhancement in fertilizer efficiency. We have developed a microplastic-free, control release platform technology that, for the first time, makes precision placement of fertilizer granules and other active ingredients possible. Granulated inputs can therefore be applied in the seeding furrow without reducing germination efficiency.

The technology has broad application for plant growers, so the value for producers of green leafy vegetables and forest tree seedlings can also be addressed.

Competition

The fertilizer market is consolidated and dominated by suppliers with significant, vertically integrated production capacity (e.g. Yara, Koch, Nutrien, ICL). Liquid fertilizer products can be applied at seeding but there is currently a gap in the market for a granular fertilizer with sustained release that can be applied with precision directly to seeds or roots. We view these companies as potential licensees.

Advantages

Unique to Cropcision, our granular fertilizer can be placed directly in the seeding furrow at much reduced rates per hectare compared to broadcast applications, thereby targeting nutrition to the crop rather than weeds, supporting early vigor and rapid canopy closure. This practice then leads to reduced weed pressure and minimizes the need for herbicide control. Farmers have also pointed out the added benefit of a single tractor pass for both seeding and fertilizer application because it reduces the risk of soil compaction and saves operator hours and fuel use.
Greenhouse and forest nursery operators will benefit from adopting a simplified, more robust nutrient management with higher produce quality.

Current status

We are moving fast towards a growth phase. We have 1) established technical proof of concept in 4 crops across 4 sectors, 2) identified multiple aspects of novelty and patentability and 3) established an external field trial in 20 high value crops with the aim to establishing our first reference customer in Q2 of 2023.

Contact

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IPR

As assessed by a patent attorney with the Zacco IP consulting firm, the idea is novel and patentable. In consultation with the patent attorney we have a well—defined approach to generating the necessary data to file a patent.

Protecting our IPR with patents is central to our business model to scale through licensing.

Capital need
Seed capital of SEK 2m.

Partnership
We are currently developing a project with multiple stakeholders with mutually aligned (non-competing) interests.

Team
Jonathan Love

Michael Holmboe

Background
Jonathan has 15 years of experience developing agricultural and forest biotechnologies and a track record of successfully taking fertilizer products to market in Sweden and internationally. He has a PhD in forest biotechnology and a MBA.

Michael is an Associate Professor at Umeå University at the Department of Chemistry with expertise in organo-mineral interactions.

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