In order to better respond to the ecological challenges and the issues of an innovative digital economy, the agricultural world is having to rethink its production and distribution models.

Agriculture will have to significantly increase its productivity, while being more ethical, resource-efficient and in tune with consumer demands. I also wanted InVivo to be a driving force in building an innovation ecosystem strongly committed to creating, detecting and promoting the best AgFood innovations in France and abroad, for the benefit of farmers and consumers. This is what we have been doing for the past three years with InVivo Quest.

As we close this third edition, we are delighted to share with you so many wonderful projects that – thanks to digital technologies and biotechnology – are opening up new perspectives for our agriculture and food of tomorrow. I would also like to thank all the people who have risen up through the various challenges and taken action to make this meeting happen. Enjoy the discovery!

Thierry BLANDINIÈRES
CEO InVivo
REX on previous editions

Launched in 2017, Quest was created to source and imagine innovative and sustainable solutions to build the agriculture of the future. For the first edition, InVivo Quest met innovative AgFood project leaders in 10 regions in France. Students from agronomic schools, startups and InVivo employees were invited to participate. In 2018, the challenge was launched internationally in New York, Singapore and Berlin. These two first editions resulted in the identification of Aptimiz, a startup launched by young students from the ESA in Angers, Biomédé dedicated to soil phytoremediation and Javelot, which won the France 2018 award. At the end of this 3rd edition in 2019, Quest have met more than 400 international start-ups and build an rich ecosystem with more than a hundred partners.

Fabrice DA CANAL & Jérôme BRICKERT, Project Managers for InVivo Quest

QuestTour19: How to leverage digital technologies for a better agriculture

This QuestTour19 was really an interesting edition. Through the visits of 3 continents, and after meeting some of the best AgFood startups in the world, here are our key takeaways:

The world is composed of very different agricultural landscapes
Different types of stresses cause problems to crops whereas you are in the tropical climate of Brazil, the continental or oceanic climates of California and Europe.

« Same » problems
The key problems to tackle remain: how to control pest and plant diseases while using less chemical inputs ; how to know when to irrigate and how much ; how predict yields more accurately ; how to guarantee more traceability to the final consumer?

A wide range of solutions exist to answer to the same problems
Different solutions because if we take the example of irrigation, different approaches differ from in soil sensors, on-plant sensors to aerial imagery. Whereas the role is to measure soil moisture, sap flow, water pooling or drainage tiles, digital technologies can help to take better educated decisions.

The importance of building a global ecosystem
Being able to be at the heart of an international ecosystem is key in a world where the biggest issues need to be adressed collectively by joining forces with other stakeholders from the value-chain.

Technology pull vs technology push industry
Digital technologies should never be dissociated from field knowledge and agronomic know-how. In this regard, solutions need to be co-developed with the final users: the farmers. If AgTech startups succeed to onboard farmers in the process, the industry will shift from a technology push to a technology pull, paving the way to promising applications. InVivo Quest is happy to be working with initiatives such as Fermes Leader by InVivo or H2020 Project Smart Agri Hubs, helping to connect innovators with farmers looking to improve through the use of new tools.
Brazil is an agricultural powerhouse with huge potential carrying challenges linked to sustainable development, rational production and a land management dilemma. Its Innovation and Tech scene is booming as Brazil is aware of startups’ potential as outstanding boons for a sustainable and profitable AgFood industry.

Eduardo Dallastra, CEO Bioline Latam
Quest Brazil was a unique opportunity for Bioline Latam as the company was just being created. We had the chance to connect with many interesting startups from Brazil. It was a great help for us to understand the innovation environment, to know what is being developed and to start some promising conversations with companies that attracted the interest of different department of Bioline Group.

For a second stop in the QuestTour19, InVivo chose to stop in the birthplace of Tech innovation: San Francisco and the Silicon Valley. California is not only a wonderful place for innovation, it is also the number one agricultural state in the US and one of the most productive area in the world. It made sense for Quest to stop in this region.

Matthieu Soulé, Deputy CEO
L’Atelier BNP Paribas North America
The dynamic around AgTech and FoodTech is really accelerating with investments of more than 2 billion dollars last year. The key topics are urban farming, precision farming and new sources of proteins.
Quest France

As the first agricultural nation in Europe, France has a huge role to play in the structuration of a European AgTech ecosystem. France is already seen as a potential home for digital scale-ups but the quality of its scientific R&D centers represents very solid foundations and could nurture the development of future biotech champions.

Kapsera develops half-millimeter microcapsules made of argilate, a material derived from brown algae, and therefore biodegradable, capable of protecting the soil and improving its performance.

Kapsera: Quest France Laureate

Quest Iberia

Spain and Portugal produce more than 46% of the fruits in Europe. AgFood startups in both countries are booming as the region holds a special know-how in greenhouses cultures, irrigation systems and biosolutions.
Igor CHALFOUN, CEO
Tbit is a Brazilian Agtech that transforms the Agribusiness by ensuring world food security by accelerating processes and bringing transparency in the commercial relations between producers and companies applying Computer Vision and Artificial Intelligence on the inspection and certification of agricultural goods, especially in the grains and seeds industry.

Alvaro RAMIREZ, Founder CEO - Elia MONTENEGRO, Regional Director
We have developed the World’s Largest Fresh Local Produce Marketplace where small-to-mid sized growers, independent truckers and grocers can connect directly. Our marketplace allows farmers to list their fresh produce, aggregates volume across multiple small growers, giving retailers one location to shop from various small farmers and meet their volume demand. Grocers have direct access to farmers inventories and are able negotiate prices in real time. Farmers and grocers can directly hire owner/operator truckers without the need of intermediaries dramatically lowering the cost of shipping.

Antoine DREVELLE, CEO - Édouard DULIEGE, CTO - Nicolas LECERF, Agronomy Manager - Marie TRANIER, Product Development Manager - Wafa BOUHLEL, Formulation Specialist
Kapsera designs solutions that combine the best of science and nature to ensure that tomorrow’s agriculture is efficient and sustainable. We aim to deliver performance and sustainability in agriculture thanks to our unique microfluidic encapsulation technology. Our ambition: offer farmers and key players of agribusiness efficient biofertilizers and biopesticides for both greenhouses and open field crops. Our core/shell capsules are made of a biodegradable shell, based on alginate, a natural product extracted from brown seaweed. They are compatible with standard farm equipment and optimized, with tailor-made liquid core, for stabilizing active ingredients and improving field performance.

Nicolas CARVALLO, CTO - Nicolas CAVALIER, COO - Sébastien DEMECH, CEO
Smart solution for irrigation optimization. No waste! Each plant receives the exact amount of water. Automatic programming and predictive maintenance of irrigation systems through IoT and AI.

Felix BONDUELLE, Founder CEO
The first connected device to monitor the grain temperature in storage. Once the sensor is planted in the grain and through our application available on PC and Smartphone, the user can follow the temperature of the grains 24H/day and 7 days/ Week. With several measurements/day automatically transmitted to your app, the user can have a more efficient control on the ventilation of the silos. As a result, you can preserve the quality of the grain by reducing the risks of insects or germination but also decreasing the storage costs by reducing th costs of ventilation and insecticide treatment.
Ludovic VINCENT, Co-Founder, CEO - Patricia GIFU, Co-Founder, Chief Technology Officer

BIOMEDE diagnoses agricultural soils by x-ray analyses and extracts heavy metals using hyperaccumulative plants. More than 28% of the European soils are contaminated with heavy metals. BIOMEDE develops unique soil treatment solutions by using seeds of phytoextractive plants that can extract these pollutants.

Matthieu Carpentier, Co-founder, Vice chairman CEO - Simon Denonnain, Co-founder, CEO - Armand Sachot, Co-founder, Chairman

At Aptimiz, we believe that reorganising working time in agriculture will improve both farmers’ performances and their daily lives. Thanks to our strong knowledge of the agricultural environment, its specific problems and the reality of what happens in the field, we are building a global and autonomous solution allowing to measure, analyse and optimise human agricultural working time by meeting farmers’ needs.

Charles NESPOULOUS, Chairman

Founded in 2015, Chouette is a French leading precision viticulture company, providing solutions to help winemakers monitor their vineyards. Chouette is using a fully automatic drone and an Artificial Intelligence technology. The 1 mm/pixel precision makes Chouette one of the most renowned companies in the French viticulture data landscape. With vine vigor map and leaf area index, winemakers get timely information to improve grape quality and optimize harvest scheduling. With high precision disease map, they can prevent the spread with early identification of symptomatic crops (missing plants, trunk disease, Flavescence dorée, downy Mildew). Winemakers can take immediate actions, increase efficiency and reduce costs.

Julie CHAMPION, Business Developer - Léo RICHER, Associate, Cloud platform and data manager

Considered as the farmer’s 3rd eye, Copeeks develops a digital solution, called PEEK, including a camera, sensors and artificial intelligence. The solution makes it possible to automatically analyse animal behaviour and avoid health or production incidents. The farmer saves time and optimizes his technical performance. It is functional on dairy, pork and poultry production. It is also adapted to crop production.

Gérald GERMAIN, CEO Founder

Solution for recognition, mapping of weeds or diseases and control of spraying or other procedures. It is based on robust hyperspectral sensor technology and software processing by artificial intelligence based on deep learning. Installed on the spray boom or on other agricultural machines, the solution, used for weeding, identifies and discriminates weeds species in order to map them and control localized spraying in real time.
Scott Dickson DAGONDON, Co-founder, Director of Artificial Intelligence
Motorleaf uses artificial intelligence to accurately predict the yield of greenhouse crops. The technology employs a high fidelity approach in predicting yield by connecting to every data point that’s being collected in a greenhouse, ranging from climate conditions, plant growth data, nutrient and fertilizer data, etc. Farmers use Motorleaf to plan the promotion, sales, and distribution of their crops. Motorleaf’s AI-based yield prediction system is built on the philosophy of data-driven agriculture -- to harness the power of sensors, information, and A.I. instead of intuition and guessing to solve the challenges of crop cultivation and food production.

Alvyn SEVERIEN, Co-founder, CEO - Gaëtan GOHIN, Co-founder, Rainmaker
At Algama, we are passionate about exploring algae’s untapped potential to create new technologies, ingredients and products that are always healthy, sustainable and very tasty. Not only do microalgae have unrivaled health benefits, up to 70% protein, vitamins, minerals and polyunsaturated fatty acids; they are also one of the most sustainable food we can find today. Microalgae are a true “superfood” and have been around for centuries, but it’s only now that, thanks to Algama’s proprietary technology and unique formulation capabilities, we can extract the full benefits they offer.

Caroline PÉCHERY, Co-founder - Adrien DUMITRESCO, Co-founder
At ScanUp, we co-create brand’s Clean Label products with our community to match new consumer expectations. We use a collaborative approach that allows brands to interact directly with consumers through our mobile app. Our co-creation space allows brands to test and validate their innovations with our community before their launch by asking questions. We mobilize our users by bringing them transparency on food products (degree of processing, Nutri-score, etc.) through a barcode scanning system.

Thibaut JARROUSSE, Co-Founder - Adrien GRIZEAU, Customers success
D-Vine, the connected sommelier, is a wine by the glass tasting device that allows you to enjoy a wine, in the perfect conditions of temperature and aeration, in less than 1 minute. 500 hotels and restaurants are equipped and offer to their customers to choose among 70 different wines in 10cl flacons, including top French Grands Crus.

Florian BRETON, Founder - Sophie CUCHEVAL, Operation director
MiiMOSA is the first crowdfunding platform dedicated to food and agriculture. In 4 years, MiiMOSA has supported 2300 projects in France and Belgium, and is now the European leader of alternative financing for agriculture. In 2018, MiiMOSA launched its crowdlending offer, which allows (i) farmer and food companies to borrow easily and quickly among citizens, (ii) citizens to collectively fund projects they are interested in, and getting 2% to 6% interest rate. Visit us at www.miimosa.com.
Frederico RIBEIRO BENTO, Technical Account Manager - Sophie DUFRECHOU, Business Development & Sales
What if every product was completely transparent, and consumers could know where it came from: right from the farms, through the processing industries, until the final packaging? Connecting Food is a blockchain-based transparency platform aimed at food industrials. We help them create value showcasing the transparency of their food chains. We track in real time every batch of production, and audit digitally that every criteria of the products’ requirement is respected.

Carole ROCCA, Program director
As a real laboratory of innovation, this living-lab puts farmers at the center of the system to test and design the digital services of tomorrow. The network brings together 21 cooperatives and more than 300 curious and motivated farmers to create a true community to face the challenge of digital transformation. Sharings and feedbacks can improve the innovative products offered by startups and by the business lines of Bioline by InVivo. Enabling farmers to produce more and better through new technologies is the major challenge of this digital age and the main goal of the Fermes LEADER network.

Julie BOUNAN, Business Unit Manager - Joséphine DE LAVIGNE, Business Development - Caroline LECLERCQ, Marketing Assistant - Gabriel ARNOULD, Engineering Management - Caroline KOHLER, Farm Manager - Yani DANIEL, Assistant Farm Manager - Blanche CAILLON, Assistant Farm Manager

Cultivate the Unique Taste
La Plucherie grows exceptional, delicate, rare or intense savours on-demand for Chefs:
• Microgreens (Japanese mustard, borage, leek, parsley, cilantro, sweet corn…)
• Edible flowers (white borage, pineapple sage, bee balm, hysope…)
• Herbs (oxalis, Persian basil, Corean mint, gold shiso…)

With an eco-friendly approach:
• Local growing • Saving up to 90% of water • Biodegradable packaging
• Walking or electric vehicle delivery

The French “Savoir-faire” in Agriculture serving Gastronomy Excellence.
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Elizabeth MACE, Marketing & Business Development Director
BIOLINE AgroSciences is a major player in Biocontrol internationally and offers growers a full range of high quality, efficient and innovative biocontrol solutions that enable growers to meet the growing demand for high quality products. With its dedicated biocontrol range of more than 50 beneficials, pollinators, pheromones,
traps, nemamodes, and its professional expert technical team, Bioline Agrosciences offers growers specific and customized IPM programs to protect their crops. Its dedicated R&D team, working closely with growers, is regularly innovating in new application methods for easier and more efficient solutions.

Didier ROBERT, CEO - Nicolas FERRAS, Chief Operating Officer - Thibaut BOULANGER, Key Account Manager

SMAG supports farming professionals nationally and internationally in the deployment and integration of agronomic information systems to optimize the technical and financial management of their production. The AGROptimization System by SMAG is the only digital solutions environment to-date capable of creating an operational link between farmers, agricultural advisors and farming organisations. It offers the guarantee of transparency and security that make SMAG an innovative software publisher, focused on farm performance and the optimization of farming practices. Welcome to Smart Agriculture!

Nicolas MAUPU, Sales manager

Sencrop is a collaborative in-field data solution providing real-time weather information to the farmers. Our mission is to empower ALL farmers to make better decisions in their daily works, with a positive agro-environmental footprint. With more than +10,000 users, in 14 countries, Sencrop is the European leader of agro-weather solutions for farmers. Thanks to a very collaborative application, Sencrop permits cooperatives, grain merchants, seed companies, ... and all farmers’ groups, to better collaborate and bring more value to their growers.

Frederik TAARNHØJ, Director and Christian VANGGAARD, Application Specialist

FaunaPhotonics is building next generation insect monitoring technology, which supports integrated pest management including timely treatments and intelligent spraying equipment. The technology combines light associated information on insects collected with a patent protected sensor technique and machine learning algorithms to differentiate among insect groups. We will fill gaps in knowledge of insect populations, leading to more sustainable agricultural production and improvements in understanding insect biodiversity and control of insect born disease. On our journey we will make insect monitoring easier for our customers.

Bernardo COSTA, Head of Europe & Latam

Fruit farmers experience yield losses of about 15% annually due to pests & diseases. Using advanced aerial imagery and artificial intelligence, Aerobotics helps you optimize your yield performance by providing critical data on the health of every tree or vine in your field. Your whole farm is captured in a digital space giving you insight into every orchard boundary, variety, acreage, number of trees and missing trees. The data zooms in to the details including the health, size, GPS location of each tree and fruit counts.