AgroCares Lab-in-a-box

Name	AgroCares Lab-in-a-box
Company / institution:	Csernozjom Kft. / AgroCares B.V.
Website:	www.talajszken.hu
Country:	Hungary
Segment:	Agricultural technology
Description of eco-technology / Summary of the offer	The AgroCares Lab-in-a-box is the most complete, fast, affordable and reliable solution to test nutrients on-site. Users have direct access to services only laboratories could provide until now, testing up to 22,500 nutrient samples a year themselves without any previous lab experience. After collecting a representative sample the user has to dry and grind the soil so a minimal preparation is needed before testing. Sample-prep equipment is included. When the measurement is done, data are being sent to our Global Soil Database for analyzing and in a few minutes nutrient status and recommendations are received. All components that the Lab-in-a-Box contains are standardized and tested by AgroCares scientists. It uses MIR and XRF spectroscopy instead of wet chemistry and can analyze up to 100 samples in a day. At AgroCares we put the knowledge of our lead scientists in the food producer’s hands by giving access to our Global Soil Database. In the near future we can give also acces to databases to measure nutrients in feed and leaf materials. The Lab-in-a-Box will now provide farmers with a complete soil fertility status and customizable hands-on management recommendations.

How is it eco-innovative?	Lab-in-a-Box is eco-innovative from several aspects. First of all, there is no need of chemicals for soil testing compared to traditional wet chemistry laboratories. Also the preparation time required by Lab-in-a-Box is a lot less than other laboratories demand. AgroCares technologies offer faster soil testing method compared to the traditional 2 or 3 weeks, users can receive their soil testing report on the same day the samples are taken. At AgroCares we deliver innovative services to contribute to closing the world food gap. We achieve this with cutting edge data solutions to measure nutrients and other key parameters in soil (SoilCares), in feed (FeedCares) and in leaf (LeafCares) which ultimately leads to sustainable yield and production increase. Due to the extracting nutrient management, the fertility of soils is degrading and the soils are more vulnerable to the extreme weather conditions (e.g. drought sensibility, erosion). Maintaining the soil fertility is one of the biggest challenges now facing the farming community. To save the fertility of the soils it has got a high impact in the climate adaptation and resilience as well. The primary responsibility of nutrient management today is to harmonize the preservation of soil fertility with farming objectives and environmental concerns. The need for techniques and instruments that allow rapid field soil monitoring is increasing. Innovation is an ongoing process for AgroCares and the key to develop game changing technologies. We combine innovative sensor technology with data mining and modelling. Our strength lies in data collection and the conversion of analytical data and sensor data into field and client specific recommendations. There are many advantages with using the technique: it is fast, non-destructive, requires a minimum of sample preparation and does not involve any (hazardous) chemicals.

What are the main advantages?	The soil fertility status of agricultural land is under pressure and there is a need for proper soil nutrient management strategies. Such strategies should be based on information of the actual soil fertility status. Since traditional soil testing is time consuming and expensive, there is a need for techniques and instruments that allow rapid, affordable, and precise routine soil testing. AgroCares technologies offer faster soil testing method involve little to no consumables, and may therefore be shown to offer a fast, cheap alternative to the traditional methods, with the potential of being applicable in a field environment. With the Lab-in-a-Box users can receive their soil testing report on the same day the samples are taken. Farmers do not need to wait for time consuming wet chemistry laboratories for making a smart decision. It is especially important in the busiest periods of the season where laboratories are already over-whelmed. The Lab-in-a-Box provides quick and reliable, complete soil fertility status. It is possible to customize the reports to a brand so a company can recommend their own fertilizers on a personalized report with their logo. With the GPS located data that the Lab-in-a-Box provides we can create a mapped overview of the nutrient needs in the tested area. Data obtained with the Lab-in-a-Box can be integrated in management systems.

Forms of cooperation looking for	Sale to end-user in the calibrated countries and looking for partners for developing calibration database in the not calibrated countries. Already on the market in Europe in Hungary, Poland, Denmark and The Netherlands. To enable the operation of an AgroCares Lab-in-a-Box in a new country, a calibration exercise has to be undertaken – we are looking for partners for calibration. AgroCares is in the market preparation stage for the United Kingdom, France, Germany, Russia, Indonesia, Botswana, South Africa, Argentina and the rest of the USA. This mean we are exploring the market in these countries and looking for potential partners for developing calibration database there.
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