

ATLANTBERRY

Expanding berry production in the North Atlantic region

Report project year 1

Reporting period

This report is for project year 1 of the project, for the period July 1st 2010 – June 30th 2011.

Project objectives

The main objective of the project is to form the base for a commercial production of berries in plastic tunnels in Iceland, Faroe Islands and Greenland. The long-term objective is a future supply of the domestic market in these countries with locally produced fresh berries.

Project partners and project organisation

Project partners are Njøs næringsutvikling AS (Norway) represented by Dag Røen (project leader), Agricultural University of Iceland, Reykir (Iceland) represented by Jón Kr. Arnarson and Úlfur Oskarsson, Bunaðarstovan (Faroe Islands) represented by Rólvur Djurhuus, Upernaviarsuk Agricultural Station (Greenland) represented by Anders Iversen, 3 growers at Iceland (Sigrún Reynisdóttir and Ingólfur Guðnason ; Hólmfriður Geirsdóttir and Steinar Jensen; Gisli Jóhannsson*), 1 grower at Faroe Islands (Jákup K. Bærentsen*), Farmers Association Iceland (Iceland) represented by Ægir Þór Þórsson* and Guðbjörg Helga Jóhannisdóttir*, Alvereng gård (Norway) represented by Pål Alvereng, Sognabær DA (Norway) represented by Ola Hopperstad, Sagaplant AS (Norway) represented by Jan Meland, Graminor AS (Norway) represented by Dag Røen and Muath Alsheikh, FMLA Sogn og Fjordane (Norway) represented by Torbjørn Takle and AL Gartnerhallen (Norway) represented by Nina Heiberg. Persons marked with * have joined the project group during project year 1.

The project work is organized in 7 work packages (WP's). Below is a report for first project year for each of these work packages.

WP1: Improve plastic tunnel construction

The risk of wind damage is a major challenge when moving berry production in plastic tunnels to areas where strong winds are more frequent. A very important part of the project is therefore to further develop the tunnel constructions to withstand stronger wind pressure.

A workshop was arranged January 2011 at SINTEF in Trondheim with experts on construction technique, geo-technique and wind load. Participants from ATLANTBERRY project was Ola

Hopperstad (Sognabær/Hagebutikken), Anders Iversen (Upervnavarsuk Agricultural Station), Pål Alvereng (Alvereng gård), Torbjørn Takle (FMLA Sogn og Fjordane) and Dag Røen (Njøs næringsutvikling AS). Omar Vangsnes from Sognabær/Hagebutikken and Alan Butchart from the steel producer REMENCO in Scotland also participated in the workshop.

The workshop came up with several alternative suggestions to improvements to make the tunnels withstand stronger winds. Some of the suggestions are already implemented in the tunnels that are put up at Iceland, Faroe Islands and Greenland during 2011. The tunnels with ongoing improvements to withstand stronger winds are launched from Hagebutikken AS under the brand name Arctic Extreme Tunnel (<http://www.arctictunnel.com/extreme.html>).

Supplementary funding was needed to fully cover the costs of the SINTEF workshop. An application was sent from Hagebutikken AS to Innovasjon Norge, with financing of the SINTEF workshop being a part of this application. The SINTEF workshop part (NOK 150.000) of the funding from Innovasjon Norge to Hagebutikken is included as a local funding from Norway in the account of ATLANTBERRY project year 1.

Theoretical calculations of wind load on constructions with curved membrane roofs are complicated, especially when several tunnels are put aside each other. SINTEF therefore suggests testing in wind tunnels to further check construction weaknesses and possible improvements. Wind tunnel tests are expensive, so additional funding will be needed in order to perform such tests. Hagebutikken AS now considers applying for extra funding for wind tunnel tests of their improved tunnels.

WP2: Develop locally adapted protocol for protected berry production in North Atlantic region

The main focus during first project year has been on improving tunnel constructions, arranging agreements, order and transport of tunnels and plants to Iceland, Faroe Islands and Greenland. More resources than expected were needed for this. It was therefore necessary to postpone writing of first draft of berry production protocol from project year 1 to project year 2.

WP3: Technology transfer of modern berry production through networking

A berry network in the North Atlantic region has been established, including growers, advisors, and researchers from the four participating countries. The first project meeting was arranged in Sogn, Norway in August 2010 with 15 participants. A central part of this meeting was visits to well run farms with strawberries and raspberries. The county Sogn og Fjordane has the largest production area of raspberries in Norway, and much of the raspberry acreage is with plastic tunnels. Advisors and growers from Norway with long experience in berry production are in the project group, and two advisors from the Farmers Association at Iceland were included during the first project year.



Participants at project meeting in Sogn, Norway, August 2010.

WP4: Establish tunnels and develop berry production in Iceland

The Atlantberry project has had a good start in Iceland and it is likely that the project objectives will be achieved. However, full experience of the culturing methods and the plastic tunnels will not be reached until next year.

Weather

The spring of 2011 was not as mild as previous years. Frost nights occurred in May. June was rather cold or the coldest since 1999 (9.2°C in Reykjavík). Therefore, the harvest was somewhat later than expected. While July was more or less clear and quite warm, it was not as warm as in previous years (12.2°C in Reykjavík). The end of July and beginning of August were wet with reduced sunlight which slowed down ripening of fruits. Fortunately, most of August was bright and warm.

Financing

Participants have applied for several grants this year. The following grants have been obtained:

- The Development Centre of South Iceland (Atvinnuþróunarfélag Suðurlands) granted 1.500.000 ISK over a period of three year. Payment for 2011 is 500.000 ISK, due in late August or early September.
- The Agricultural Productivity Fund (Framleiðnisjóður landbúnaðarins) granted two of the project growers (Engi and Dalsgardur) a total of 2.900.000 ISK for buying and constructing tunnels. This grant was essential for the farmers and improves the project budget in an indirect way, by reducing costs for tunnel rental fee. However, an application for the project directly was rejected by the fund.

- Icelandic Association of Horticulture Producers (Samband garðyrkjubænda) sponsored the tour to Norway for growers in August 2010 by 300.000 ISK.

It is clear that additional funding is needed and application work will continue in cooperation with the Farmers Association of Iceland (Bændasamtökin).

Production

The three growers participating in the project are ready for or have started production of berries in plastic tunnels. This spring, producers bought strawberry plants 'Elsanta' and these yielded excellent harvest this summer. The strawberry and raspberry plants, provided by the project, have either yielded crops this summer or are being planted in newly build tunnels.

The growers at Kvistar (Hólmfríður and Steinar), had already started their raspberry production last summer. The raspberries 'Glen Ample' are now grown in two 130 m² plastic tunnels. Some of the plants were newly propagated and were too small to reach their full potential this summer. The larger plants gave a very good harvest this summer or more than 2 kg/m². The capacity in picking has proved to be slow and may call for improved work process and techniques in using the trellis.



Raspberry and strawberry plants in plastic houses at Kvistar.

The strawberry production has also gone well and the plants ('Elsanta'), imported early this spring, have given an excellent harvest with very good tasting berries. The 'Sonata' cultivar provided by Atlantberry, yielded berries in early August and looks promising. Plants of other varieties are still too few for significant comparison.

The growers at Engi (Ingolfur and Sigrún) also got excellent strawberry ('Elsanta') yield in a plastic tunnel or about 1.5 kg/m². The plants should reach maturity next year and give still better yield. Other varieties will come into full production next year. Raspberries and strawberries will be planted in the tunnel from Sognabær in August 2011.

The third grower (Gísli in Dalskarð) is also growing strawberries in a greenhouse and has had an excellent yield. His raspberry plants will be transplanted in the tunnel from Sognabær in August 2011. The plants should yield berries next year.

Marketing

It seems that the high demand for fresh raspberries and strawberries in Iceland makes marketing easy at the moment. We still need, however, professional advice on marketing issues and have asked G. Helga Jóhannesdóttir, an innovation adviser at The Farmers Association, for assistance.

The farmers have mostly sold their harvest at the farm, but a limited amount was sold in cooperation with a farmers market in Reykjavik. The retail price is about 2,500 ISK/kg for strawberries and about 3,000 ISK/kg and for raspberries.



First raspberries at Kvistar from plants planted 2010 in a plastic house formerly used for production of forest plants.

Tunnels

This summer, the growers in Engi and Dalskarð ordered two 240 m² tunnels from Sognabær. One was constructed in early August 2011 and an advisor from Sognabær assisted with the work. The other will be ready later in August. In Dalskarð the tunnel will be subsequently planted with raspberries and in Engi raspberries and strawberries will be planted in separate parts of the tunnel. It will be interesting to see how the tunnels will withstand the weather conditions at these sites.



Site for tunnel at Engi. Picture was taken when putting up tunnel August 2011 (project year 2).

Plants

The growers imported privately some strawberry plants ('Elsanta') in early spring to ensure good chances of an early crop. Raspberry plants and more cultivars of strawberries were provided by the project. These plants often arrived in poor condition and as a consequence there is need to reconsider the procedure of plant delivery. Plant shipments from Norway generally arrived in good condition while there was failure in maintaining plant quality in plants arriving from the Netherlands and Scotland.

General aspects

In general the project has been successful so far. The visit to Sognefjord for first project meeting in August 2010 was invaluable for the growers for their knowledge and confidence. Also, Icelandic growers have been in contact with other participants in the project, both in Iceland and Norway, to compare notes and seek advice. Furthermore, this spring, a Dutch consultant provided by The Farmers Association visited the participants and gave good advice.

For obtaining better results, there is need to optimize propagation, production and harvesting techniques. Here are some of the topics needed to be addressed:

- The distance between rows and density of plants.
- Plant types and license for cultivars concerning local propagation.
- Methods for harvesting berries to obtain better harvesting capacity.

Conclusion

In general, the program has already demonstrated the potential of berry production in Iceland. Harvesting began slightly later than planned but has been successful. It is clear that interest is growing among Icelandic horticultural farmers for berry production and the

marketing looks promising. Local financing has not been sufficient due to difficult economic conditions, but we are still optimistic for the future.

WP5: Establish tunnels and develop berry production in Faroe Islands

Local Financing

During the first project year the Faroese partner managed to get local financing to the project, totally 300.000 DKK. 240.000 DKK were granted by Granskingarráðið (The Faroese Research Council) and 60.000 DKK by Meginfelag Búnaðarmanna (The Farmers Cooperation). The funding will be paid in equal rates, one rate per project year.

Participating Grower

During this first project year, a local grower – Jákup Bærentsen - took his interest in the project, and decision was taken to place the tunnel at his farm, which is located in Sund, a few kilometers from Tórshavn. Till now Jacob Bærentsen has been running with sheep and grass production.

The Tunnel

An improved tunnel version, 8 by 30 meters, was set up at Bærentsens farm in Sund on June 8th 2011. Prior to this, holes were dug in the soil, one hole per leg and one iron rod was put into each hole. Then the legs were connected to the rods by welding and finally the holes were filled with concrete.



Digging of holes for legs and welding of legs to iron rods in June 2011.

Plants

Half of the tunnel is planted with raspberries and the other half with strawberries. The raspberries are planted in three rows lengthwise, one in the middle of the tunnel and the other 2.5 meters at each side, plant distance is 50 cm. The strawberries are planted in five double rows lengthwise, distance between rows is 50 cm and plant distance in row is 33 cm.

The raspberry cultivars used are 'Glen Ample', 'Varnes', RU 004 04106 and RU 974 07002. The strawberry cultivars used are 'Sonata', 'Frida', 'Honeoye', 'Polka', 'Korona', GN 1189.3 and GN 1196.15.



Arctic Tunnel at Sund, Faroe Islands put up June 2011.

WP6: Establish tunnels and develop berry production in Greenland

Local financing

Before project meeting at Njøs August 2010 some part of the local funding was not established. Most of the summer and early autumn we tried to find local sponsors, and made applications. We sent applications to Nuna Fonden and to the municipality. We had at this point got positive answer from Grønlandsbankens Erhverfsfond with 150.000 DKK over 3 years. Later in the autumn we got a positive answer from the municipality for 50.000 DKK for 2011, and we will apply again this fall for support in 2012. In December we received a negative answer from Nuna Fonden.

Tunnel

In September we received an offer of a tunnel from Hagebutikken (Sognabær), this was approved in November. Time of delivery should be May – June 2011. In a country like Greenland it's always difficult to predict time of delivery. The tunnel arrived at Qaqortoq by the end of June, but was not delivered in Upernaviarsuk before in the middle of July. On the basis of this we had to make some changes. We decided to build it in July and August, so by the end of the first project year the tunnel was not ready. After having decided which field we would use for the project, we started with the first small preparations in October 2010.



Site for tunnel at Upernaviarsuk Agricultural Station at Greenland. The picture was taken when putting up tunnel August 2011 (project year 2).

Choice of cultivars and delivery

Graminor prepared a proposal for selection of cultivars, and plants were commissioned by Sagaplant and Graminor. We received the plants by the end of May 2011, and due to late delivery of the tunnel, the plants were put into containers. The strawberry plants arrived at Upernaviarsuk in good condition, but unfortunately there were problems with the raspberry plants. All of the plants of our preferred cultivar 'Glen Ample' was damaged. The plants were put into our other tunnel, and the strawberry plants have developed satisfactory. However the raspberry plants (the few which were left) have grown slowly, and after discussions within the project group we decided not to order new plants before we had the opportunity to see how they develop during the season. The strawberry plants will be planted in tunnel by the end of August 2011.

WP7: Project administration

Order and delivery of tunnels as well as choice of cultivars, arrangement of test agreements with cultivar owners, ordering and shipment of plants has been arranged during first project year. The SINTEF workshop in January 2011 was organised by the ATLANTBERRY project.

There has been a lot of interest from the press on the ATLANTBERRY project. Some examples are enclosed with this report:

- Sogn Avis, Norway, 31 August 2010.
- Bændablaðið, Iceland, 9 September 2010
- Bændablaðið, Iceland, 23 June 2011
- Bergens Tidende, Norway, 24 July 2011
- Vagaportal, Faroe Islands
- Sosialurin – Portal, Faroe Islands

Leikanger, November 2nd 2011

Dag Røen