

ATLANTBERRY

Expanding berry production in the North Atlantic region

Report project year 2

Reporting period

This report is for project year 2 of the project, for the period July 1st 2011 – June 30th 2012.

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 (until spring 2012) and Anne Jensen (from spring 2012), 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.

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

WP1: Improve plastic tunnel construction

Work package goal: Improved construction of plastic tunnels to withstand stronger wind pressure.

State by end of project year 2: Improvements in tunnel construction are implemented and test tunnels are put up at Greenland, Faroe Islands, Iceland and Norway.

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 during project year 1 at SINTEF in Trondheim with experts on construction technique, geo-technique and wind load. The workshop came up with several alternative suggestions to improvements to make the tunnels withstand stronger winds. Some of the suggestions were implemented in the tunnels that were put up during 2011 at Iceland (1 tunnel by grower Ingólfur Guðnason and 1 tunnel by grower Gisli Jóhannsson), Faroe Islands (1 tunnel by grower Jákup K. Bærentsen) and Greenland (1 tunnel by Upernaviarsuk Agricultural Station). 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>), and they have put up test tunnels at their site in Norway.

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

Work package goal: A locally adapted protocol for protected berry production in the North Atlantic region.

State by end of project year 2: Writing of English version of protocol postponed to project year 3.

This part of the project has been further delayed, and writing of the berry production protocol take place winter 2012/2013 with deadline for English version 28 February 2013 and deadline for local translations 30 April 2013.

WP3: Technology transfer of modern berry production through networking

Work package goal: Technology transfer on modern berry production within the region through networking.

State by end of project year 2: A well functioning network of growers, advisors and R&D personnel in Greenland, Faroe Islands, Iceland and Norway has been established. Yearly project meetings are arranged with focus on transfer and exchange of knowledge and techniques.

A berry network in the North Atlantic region has been established, including growers, advisors, and researchers from the four participating countries. The second project meeting was arranged at Faroe Islands in August 2011 with 17 participants. The project meeting was held at Búnaðarstovan in Kollafjørður, and we visited the project test tunnel by grower Jákup K. Bærentsen in Sund. During the stay at Faroe Islands we also had a project board meeting and a meeting with NORA administration at their office in Thórshavn.



Participants in project meeting at Búnaðarstovan, Kollafjørður, Faroe Islands, August 2011.



Discussion on strawberry production technique in the Atlantberry test tunnel at Faroe Islands. From left: Research director Nina Heiberg (Gartnerhallen, Norway), researcher Rólvur Djurhuus (Búnaðarstovan, Faroe Islands) and grower Jákup K. Bærentsen (Faroe Islands).

WP4: Establish tunnels and develop berry production in Iceland

Work package goal: Establish test production of berries in tunnels in Iceland

State by end of project year 2: Test production of raspberries established in plastic house and tunnels by 3 growers, one of the growers with organic production. Another of the project partners has established the first commercial production of raspberries at Iceland. Organic test production of strawberries in tunnel is started by one grower. The two other growers also have established test plantings with a range of strawberry cultivars.

Local funding

The following grants for ATLANTBERRY project from Iceland have been obtained:

- The Development Centre of South Iceland (Atvinnuþróunarfélag Suðurlands) granted 1.500.000 ISK over a period of three year, with ISK 500.000 per year starting in 2011.
- 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 travel for growers to project meeting at Faroe Islands August 2011 by 300.000 ISK, as they also did ifor project meeting in Norway in 2010.

Further attempts for additional funding from Iceland have not been successful.

Tunnels

Two 240 m² test tunnels were put up by growers Ingólfur Guðnason and Gisli Jóhannsson in autumn 2011. An advisor from Sognabær assisted with the work on putting up the first tunnel.

Plants and production

Raspberry plants and strawberry plants were planted autumn 2011 in the tunnel of Ingólfur Guðnason. The raspberry plants by Gisli Jóhannsson were overwintered in a nearby plastic house in pots and put in the tunnel in spring 2012. One grower that planted raspberry plants already in 2010 has now established a commercial raspberry production in plastic house, and is expanding the production area. The raspberry plants planted in tunnels autumn 2011 will give the first full crop in summer 2013, but some berries were harvested summer 2012. The first strawberries in tunnel were harvested in 2012. Temperature and humidity loggers were put in the tunnels in 2012 season.

Experiences from tunnels and plants in 2012 season are being summed up during winter 2012/2013.

Marketing

As in 2011 it seems that the high demand for fresh raspberries and strawberries in Iceland makes marketing easy at the moment.

Retail prices in 2012 for raspberries and strawberries from growers direct to customers were for raspberries in 200 gram boxes 700 ÍSK, or 3.500 ÍSK/ kilo (about 160 DKK/ kilo), and for strawberries in 200 gram boxes 600 ÍSK, or 3.000 ÍSK/ kilo (about 135 DKK /kilo). Icelandic berries in a supermarket were priced a little bit higher.



Overwintering of plants winter 2011/2012 by grower Hólmfriður Geirsdóttir at Iceland. Plants of raspberries in pots survived well in spite of temperatures down to – 15 °C. Strawberry plants were kept in a frost-free house during winter.

WP5: Establish tunnels and develop berry production in Faroe Islands

Work package goal: Establish test production of berries in tunnels in Faroe Islands

State by end of project year 2: Test production of strawberries established in tunnel by 1 grower. First strawberries from Faroe Islands production have been marketed in summers 2011 and 2012. Climate under plastic at Faroe Islands seems to be well suited for strawberry and raspberry production. Wind is however such a challenge that stronger constructions are needed for a reliable growing system.

Important additional comment: In autumn 2012 (project year 3) the test tunnel was totally damaged in a storm while the plastic was still on. It is now concluded that the tested tunnel type is not strong enough for Faroe Islands condition. Faroe Islands will continue in the project in the last project year with an ongoing strawberry test production in greenhouse from another project Búnaðarstovan takes part in, and at the same time search for stronger tunnel / plastic house constructions that can be used at Faroe Islands. The strawberry plants in the original tunnel will probably also be kept further, and we will then continue to take recordings in these plants to see how they develop without protection or with some minor climate improvement strategies.

Local Funding

During the first project year the Faroese partner managed to get the aimed local funding to the project, totally 300.000 DKK. Of this 240.000 DKK were granted by Granskingarráðið (The Faroese

Research Council) and 60.000 DKK by Meginfelag Búnaðarmanna (The Farmers Cooperation). The funding is paid in equal rates, one rate per calendar year 2011-2013.

Tunnel

The test tunnel of 240 m² was put up by grower Jákup K. Bærentsen at Sund in June 2011 (project year 1). An advisor from Sognabær assisted with the work on putting up the tunnel. In 2011 plastic was taken off the tunnel in late September. Due to wind at that time, the plastic was damaged and new plastic was bought and put on in 2012 season. It turned out that the door solution was not optimal, as the plastic on doors were easily damaged by wind during summer. The plastic in the doors were exchanged with a stronger plastic summer 2012. Several other options of improvement of the door construction have also been discussed.



The test tunnel by Jákup K. Bærentsen at Sund, Faroe Islands, August 2011.

Plants and production

Strawberry and raspberry plants were planted in the tunnel in June 2011. The first strawberry crop was harvested in the test tunnel in summer 2011. All plants survived the winter 2011/2012 well, but many raspberry buds were damaged by frost during a storm in May 2012 before the plastic was put on again. The strawberry plants did not suffer damage from this event. Strawberry harvest in 2012 started 9 July. Temperature and humidity logger was put in the tunnel in 2012 season.

Experiences from tunnel and plants in 2012 season are summed up during winter 2012/2013.

Marketing

All strawberries from the test tunnel have been sold to the restaurant at Hotel Føroyar for a price of 150 DKK per kg.

WP6: Establish tunnels and develop berry production in Greenland

Work package goal: Establish test production of berries in tunnels in Greenland.

State by end of project year 2: Test production of strawberries established in tunnel at Upernaviarsuk Agricultural Station. The first strawberries from Greenland was marketed in August 2012 (project year 3). Climate under plastic at Faroe Islands seem to be well suited for strawberry production, we do not yet know whether raspberries can be a potential crop here. The wind is however such a challenge that stronger constructions are probably needed for a reliable growing system.

Important additional comment: In late autumn 2012 this test tunnel was also totally damaged in a storm while the plastic was still on. We have not yet finally concluded whether the tunnel construction is too weak also for Greenland conditions, but this damage indicate this. We will now decide how to continue the testing at Greenland. Probably a stronger plastic house can be put up over the existing strawberry plants.

Local funding

Grønlandsbankens Erhvervsfond granted 150.000 DKK over 3 years to ATLANTBERRY project. In 2011 and 2012 Kommune Kujalleq granted DKK 50.000 per year to the project, and we will apply for a similar amount in 2013.

Tunnel

The test tunnel of 240 m² was put up at Upernaviarsuk Agricultural Station in late summer 2011. Also at Greenland problems with door construction of the tunnel has been experienced after a summer storm in 2012.

Plants and production

Strawberry plants were planted in the tunnel in August 2011. They had snow cover unusually late in spring 2012, and plastic was not put on tunnel until 11 June. Never the less the first strawberry crop was harvested in the test tunnel in summer 2012 (start of harvest early August). June and July were rather hot and dry. In a normal year plastic can probably be put on at least one month earlier, probably shifting the start of strawberry harvest until sometime during July. Survival of raspberry plants after shipment in 2011 was very poor, and growth of the surviving plants was also very poor. Some additional plants of strawberries of raspberries and also some Ribes cuttings were sent from Norway to Greenland in spring 2012. Temperature and humidity logger was put in the tunnel in 2012 season.

Experiences from tunnel and plants in 2012 season are summed up during winter 2012/2013. Based on the temperature log from the tunnel in 2012 we can estimate potential for production of raspberries at Greenland and eventually send raspberry roots for better establishment of new plants in summer 2013.



Aqqalooraq Frederiksen, Efa Poulsen and Anne Jensen by the strawberry plants in the tunnel at Upernaviarsuk Agricultural Station early August 2012.



The first strawberries harvested in Greenland, August 2012.

Marketing

The strawberries from the tunnel at Greenland were sold in Qaqortoq (in project year 3).

WP7: Project administration

Project seminar was arranged at Faroe Islands in August 2011 with 17 participants (see WP3). Project board meetings were arranged at Faroe Islands 15 August 2011, and on Skype 13 January 2012.

Leikanger, 21 December 2012

Dag Røen