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European Innovation Partnership (EIP) Wales

Feasibility study on Squill Production in North Wales

Project Update

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Spring 2019

Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig
Ewrop yn Buddsoddi mewn Ardaloedd Gwledig
European Agricultural Fund for Rural Development:
Europe Investing in Rural Areas

Llywodraeth Cymru
Welsh Government

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1. Project Background

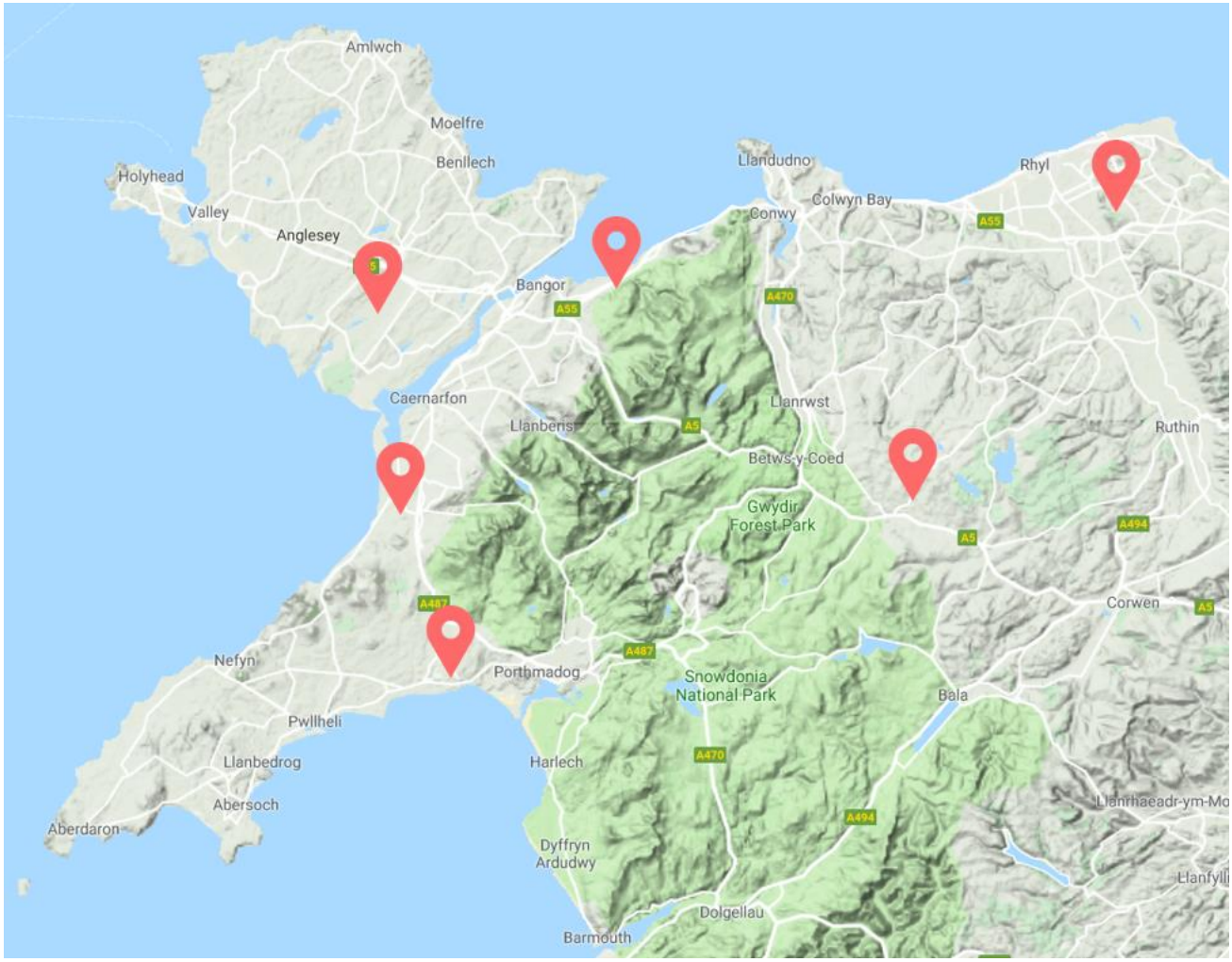
White squill *(Drimia maritima)* is a perennial herb that is native to the Mediterranean region, western Asia and northern Africa. If the plant is grown in the correct conditions the bulb of the plant contains a compound that's used in many anti-cough syrups.

This project is trialling the growth of squill on a small scale on multiple farms across north Wales.

The aim is to establish the demands of the plant including the agronomy, harvesting, extraction techniques and the cost of production. Research will also be undertaken on both the demand for the product and the viability of its production in Wales.

If the results are positive, growing squill could be an innovative diversification option for Welsh farming businesses and land owners.

2. Trial Sites



Map showing all six locations of the trial sites

Six trial sites have been established across north Wales, all with different terrain, altitude, pH, rainfall and distance from the coast.

Feedback has been given back to farmers individually and will be on a group level when we are reporting the findings.

3. The Bulb

The bulbs were sourced through the Bangor University research team. They were collected in May 2018 and planted soon after.

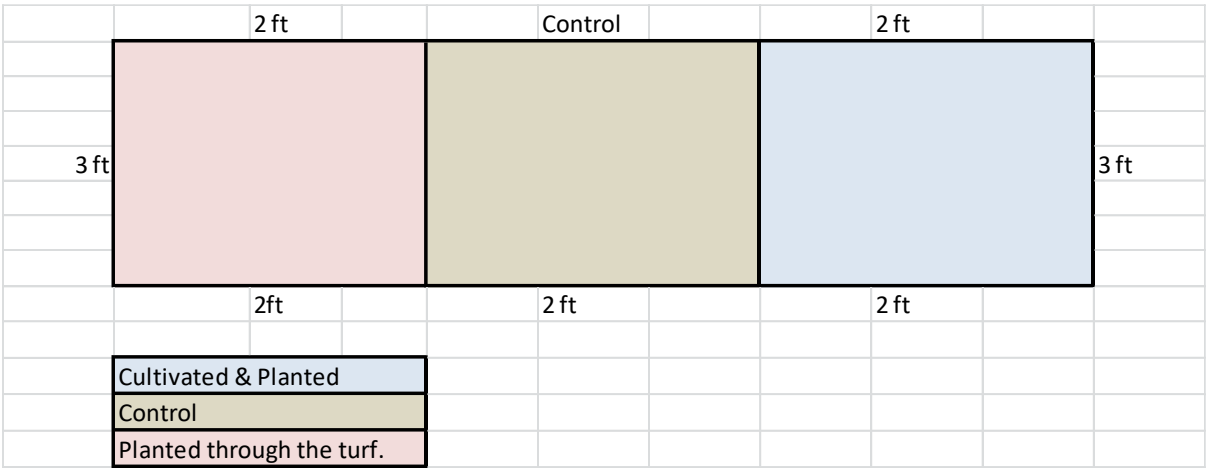
There was a great variance in the size of the

The bulbs were sorted into seven boxes, ensuring there was a variation in the size of the bulbs in each box.

Six of the boxes were weighed then planted. One box was shipped for analysis at BioExtractions Wales Ltd. This allowed us to establish the properties of the bulb to enable us to benchmark the growth and changes against the harvested bulb and crop.

4. Planting Requirements

After much discussion with the group members and Charlie Morgan it was decided that the plots were to be planted as shown below:



To ensure continuity we engaged a field officer to plant all sites and to monitor regularly.

The control area acted as a barrier between the two plots. Soil samples were also taken prior to planting and further samples will be taken of the control area and planted area at harvesting time to benchmark any change.

Bangor University advised not to apply fertiliser at this stage.

The blue area was cultivated prior to planting whereas in the pink area, a small hole was dug for the bulb to be planted.

The plots were fenced off from the rest of the field with rabbit netting.

The period following planting was very dry but as the summer progressed weeding was needed on every site., Maintenance, such as weeding, takes place during each monitoring visit.

5. Ongoing Monitoring

To date the sites have been monitored four times – June/ August/December 2018 and March 2019.

Monitoring records and pictures have been accumulated.

We have had challenges from wild birds attacking the bulbs from above, so some sites had rabbit wire put over the top of the trial area to try and prevent this happening again.

Re growth has been recorded and it is anticipated that harvesting of the bulb will take place during June / early July.

New shoots soon after planting

Close up of image of the bulb

A flowering squill bulb

6. Moving Forward

It is anticipated that the plants will be harvested in June with all bulbs being uprooted and sent to the laboratory at BioExtractions Wales Ltd.

Yield from all sites will be measured by recording both the weight increase and the biomass of the bulb.

Soil sampling and analysis will be undertaken at the point of harvest for each of the three plots across all sites.

Identify the range of pharmaceutical compounds and compare them to the first batch of bulbs and benchmark the increase / decrease of any changes.

It is envisaged that about 40% of the bulbs will be retained to replant on the optimum sites for further monitoring.