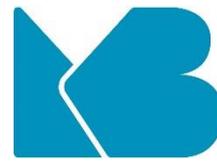




EIP WALES

Cydweithio er ffyniant gwledig
Collaborating for rural success



menter a busnes

Opportunities for market diversification and increased farm resilience with unusual and exotic vegetables and edible flower production in Wales.

UK consumers are increasingly seeking a wide range of new and diverse flavours as interest in international flavours and dishes develop. This provides an opportunity for growers to grow new, high value crops which diversify their offering to consumers. Although these niche crops have been grown successfully in different countries, there is no agronomic advice available which is specific to the climate of Wales.

This EIP Wales project, which ran from 2020 to 2022, aimed to:

1. Gain practical experience of novel edible plants, including edible flowers, supported with technical evidence for best practice cultivation in Wales to maximise production potential.
2. Develop an evidence base to support growers seeking to implement new crop types on their holdings, including toolkits for new products support with agronomic and marketing advice.

Vegetables	
<p>Okahijiki (Seaweed on land) and Agretti, types of Samphire like plants that can be grown in soil not tidal saltwater like samphire. Long, thin leaves that are harvested between summer and autumn. An annual plant, this can be harvested between April and October, or later if under protection and can be harvested regularly until flowering. Okahijiki/Agretti could be steamed with garlic, butter and salt, and were considered to be crunchy and crisp enough to go into salads and garnishes possibly as a microgreen, also known to be used in sushi. Chefs agreed these were available in specialist channels. Customers during the survey had never heard of Okahijiki/Agretti.</p>	
<p>Perilla A mint coriander-flavoured herb that can be used to supplement salads, as a garnish or as an additional to Sushi, curries or tempura. Plants can be harvested 10-12 weeks after planting, but requires warmth so will need protection into the winter months. Perilla was described as a sushi essential and useful in Asian cookery, potential as a microgreen and as a change or addition to basil especially the Thai types. Chefs were aware of specialist channels where perilla is available.</p>	



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Oyster Leaf

Germinates in cooler temperatures if fresh seed is available. This is a hardy perennial with evergreen foliage can be harvested year-round, but requires careful cultivation to prevent flowering in the summer. Leaves can be used fresh as a salad or garnish, or ingredient in oriental cooking. Oyster leaf was considered to be a perfect accompaniment for scallops and sea food dishes, particularly as a possible substitute for shellfish for vegetarian recipes, although it loses a lot of the flavour when cooked.



Callaloo

Similar to spinach, callaloo is common in Caribbean-style dishes and can be used in curries and stews or as a salad or leaf garnish. Callaloo was considered a Caribbean essential, and is becoming much more popular with modern “jerk” type cookery and already a traditional vegetable in African and West Indian cuisines. Chefs were aware you could find callaloo for sale from specialists.



Ice Plant

Used similar to samphire with fish dishes, or as a salad garnish. A perennial that flowers from July to September, leaf material can be harvested year round once established. Whilst the flowers can be eaten it rarely flowers in the UK climate. Ice plant could be used as an ingredient in a novel salad bag with leaves providing interesting cooling texture unlike other leaves as the mouth feel. It was also considered to be refreshing and useful as a palate cleansing as well as using the small tips when plating up food.



Edible Flowers

Viola

Easily grown from seed, these will flower within 12 – 16 weeks, and are best planted from summer to late autumn. Usually bought as pack bedding plants already in flower. Can also be sown under protection for early growth, or directly soil grown in the summer. Flowers can be sold as a garnish, flavouring or processed project (e.g. sugared violet). Viola does have a sweet flavour and can be used on both savoury and sweet dishes. One chef said it was a good addition to a custard based sweet, as it enhanced the appeal of it. The survey showed these were commonly recognised by customers.



<p>Begonia semperflorens Planted as bought in plugs or ready-made pack bedding, established flowering will occur from early summer through to frost periods in the autumn. Can be used as a salad flavouring, or as a vegetable in small quantities. Begonia flower was also described as a refreshingly tart apple cleanser – these were also very decorative on the plate. Customers surveyed, had never heard of apple blossom Begonia.</p>	
<p>Courgette Flowers Courgette flowers can be stuffed, tempura battered and deep fried to be served with a variety of dishes. They are from conventional courgette varieties and will produce courgettes on female flowers if not harvested for the flowers. Male flowers on the right are also sold for eating. Tempura battered courgette flowers were prepared with the candidate samples, and when given to a small taste panel it was widely well received. During the survey, courgette flower was one of the most commonly recognised.</p>	
<p>Perennial rocket Unlike the annual version that runs up to seed quickly this form can be cut back and sequentially harvested after it recovers and sends out new leaf. Can crop for 2 seasons if managed. Also useful in late autumn in protection and will overwinter for an early spring crop. Perennial Rocket was described as having a summery, sweet and hot good flavour and would use instead of the existing supply they had due to its hotter flavour and a good salad ingredient.</p>	

An additional aspect of this project was to focus on market development. The novelty of some of these crops may mean that growers will need to support their customers in achieving the best use for these products, particularly in the food service sector where diners may be unfamiliar with new and unusual crops. Samples were provided to two chefs with a limited taste testing panel, coupled with an online survey to examine what likely customers knew about these crops and what materials they might need to help them chose these products.

Agronomic Advice

Germination and establishment of the majority of these crops was easy to achieve, although growers may need to consider their sources of seed carefully to ensure viability and suitability for edible crops – particularly for flower crops which may have been treated with chemicals suitable only for ornamentals. Dedicated germination space – warmed to 20°C – would be preferable. For cultivation, these crops performed best under protection – glass or plastic polytunnels – where exposure to the elements can be avoided and biological pest control can be employed to achieve maximum levels of quality desired by consumers. Conventional products for pest and disease control may be largely

unavailable, but the short growing cycle of these crops means that problems can be minimised as well as promoting continuity of supply through careful scheduling. Similarly, specific advice for nutrition management for these crops is unlikely to be available, but general recommendations from RB209 for leafy salads (exotic vegetables) and ornamentals (exotic flowers) could be followed. Yields for indoor and outdoor plants are given below.

Customer Education

It would be beneficial to provide some measure of education for customers, especially if selling directly to the public, on how to use these products to stimulate interest. This could include recipe cards, social media posts or promotion through usual marketing channels to stimulate interest. On the same scale, pick-your-own soft fruit growers have supplied jam recipe cards to encourage increased fruit sales in periods of heavy picking. A social media presence can represent a low cost, low input, but highly effective marketing channel, so extending this to cover novel recipes and food ideas using exotic produce could easily be achieved.

Grower Perspectives

Availability and continuity of supply will be essential to promote their uptake by the food service sector. This will be an additional challenge for edible flowers which must be harvested in a very narrow window, and so care must be taken with planting schedules to ensure that a consistent harvest can be taken to match customer expectations and orders. Demand for the products may be low but with suitable innovation and marketing they could be used to diversify a product range which is of premium value.

Growers should ensure they are aware of restrictions associated with pesticides and fertilisers when growing edible crops and selling to the public. Growers should carry out a risk assessment on allergens that may be encountered during production and processing, and advise their customers that all products should be washed carefully before use.

While these crops must be grown to the highest of quality standards, they can achieve a high market price especially when sold directly to consumers. Likely price ranges for these crops:

Product	Size	Indicative Price
Agretti	Small bunches (50g)	£2 – 3 per 50g
Perilla	Small bunches (10 – 20 leaves)	15 – 30p per leaf or c. £8 per 10g
Oyster Leaf	Small bunches (30 – 50g)	£2 – £5 per 10g
Callaloo	Small bunches (50g)	£2 – 3 per 50g
Ice plant Leaves	Small bunches (10-30 leaves)	£3 – 5 per bunch
Viola Flower	Small punnets of 25 – 30 flowers	£6 – 8 per punnet, £1/g
Iceplant Flower	Small punnets of 15 – 20 flowers	£4 – 6 per punnet
Begonia Flower	Small punnets of 15 – 20 flowers	£6 – 8 per punnet
Courgette Flower	Small punnets of 5-15 flowers	£2 – 3 per flower

Conclusions

This project has demonstrated that these novel exotic crops can be adapted for production in Wales, enabling growers to provide novel exotic crops to their customers, whilst diversifying their offering. The niche nature of these crops can be a challenge – limited agronomic support and a new to develop customer demand – can be offset by their value and uniqueness, and these fit well with a mixed and varied offering.