

PACKAGING FOR HORTICULTURE



A practical guide
for small enterprises

PREFACE

The Horticulture Wales project provides focused, expert support to enhance the efficiency of businesses involved in both edible and amenity horticulture supply chains within Wales. The project works in five key areas: market information, branding and marketing, developing supply chain links, workforce skills and environmental best practice.

Small businesses face many challenges in today's marketplace and packaging is just one of them. Our research shows that for businesses involved in the Welsh horticulture sector these challenges can include: the prohibitive cost of packaging - particularly when bulk-purchasing is not an option, appropriate sourcing, working with suppliers, understanding labelling and legislation, storage and dealing with waste.

Of course every business is unique. Therefore this guide doesn't attempt to provide solutions to individual packaging needs. Its purpose is to provide straightforward information about a range of key issues that businesses involved in the Welsh horticulture sector can consider when deciding upon the packaging they use. Practical tips and case studies are used throughout. Links to further information and a packaging checklist are included.

Horticulture Wales believes that making informed decisions regarding packaging will help to build a sustainable horticulture industry for the future that benefits both the people of Wales and the environment in which we live. We hope you will find it a practical tool that you can use alongside your own research to help you decide on the packaging that works best for you.

Dr David Skydmore
Project Director
Horticulture Wales

ABOUT THIS GUIDE

Packaging has an important role in the everyday activities of horticulture businesses.

It ensures that produce can be stored and delivered to customers safely and in the best possible condition, free from contamination and - particularly for food - pose no risk to human health. Packaging can also provide space for communicating information and consumer advice. In the case of retail it provides an opportunity to visually display the brand.

Inevitably, packaging creates waste when it's disposed of. This leads to environmental consequences and business costs.

Much of this is avoidable. Technological advancements have enabled more packaging to be recycled, lightweight options are commonly available, returnable packaging allows packaging to be re-used time and again, whilst biodegradable and compostable options are becoming more widely used.

Indeed, good practice not only saves money on transport, disposal and by removing the need to buy more packaging. It can also generate a positive profile for your company and can increase sales.

But seeking out better packaging takes time and money. Many small horticulture businesses don't produce in large volumes or have the storage space to justify bulk buying from packaging suppliers, whilst designing their own packaging can be prohibitively expensive. This means that often small horticulture businesses are restricted to choosing packaging that they can get from suppliers in small batches. This is not always ideal for business or the environment.

This is where this guide can help. Whether you want to consider alternative packaging options, stay ahead of legislation, attract more customers, demonstrate a responsible business approach or simply save money. This guide is designed to enable you to quickly find out the information you need and provide the practical means to help you to take action.

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SECTION 1:

Responsibilities and opportunities

Knowing where produce comes from, how it can be stored, used or consumed, along with ensuring it can be moved around safely and arrive in the best possible condition are all important functions that packaging can provide to horticulture businesses.

Additionally, packaging can offer space for communicating marketing information about your company. Using packaging that creates less waste - that is made from compostable or recycled materials, is recyclable after use, or can be returned and reused - can add value to the positive message that you communicate and help you to build stronger relations with your customers.

But packaging isn't just about marketing and sales.

Government **legislation** exists to limit the amount of packaging waste that is generated, whilst food packaging is subject to more specific requirements to ensure that products reach the consumer free from contamination and pose no risk to human health.

- By law, **food packaging** must carry certain information and warnings, including origin, grade, use by date, ingredients, allergen information, opening and storage instructions and nutritional information. It must also be manufactured from approved food grade material.
- * **The Packaging (Essential Requirements) Regulations** puts a range of requirements on all packaging in the UK, including those related to packaging volume and weight. This is based on minimum adequate amount of packaging for consumer acceptance and what is deemed hygienic and safe.

- * **The Producer Responsibility Obligations (Packaging Waste) Regulations** assigns costs to businesses that produce 50 tonnes of packaging and have a turnover of more than £2million a year.
- **Landfill Tax** will increase by £8 per tonne per year - rising to £80 per tonne in 2014/15.

This means that, even for small horticulture businesses that make up the vast majority of the sector in Wales, staying ahead of these requirements makes sense. Not least because customers are likely to look favourably at suppliers who pass on less waste as this will help to keep their operational costs down and add value to their own environmental credentials.

The links provided in Section 4 provide further information on packaging and food labelling requirements.



SECTION 2:

Materials and symbols

Packaging is used at every stage of the horticulture supply chain. The type of packaging you use will depend on the type of produce it contains and what you want the packaging to do - you may use packaging for the growing process, for transporting produce to customers, in the retail environment or across a number of these functions.

As products move along the supply chain - from producer to consumer - packaging might be handled by staff, distributors, wholesalers, retailers and consumers. Ultimately it will need your customers to take responsibility for its disposal or return, unless your packaging is collected by you.

This can become a burden to your customers. So it's important to consider what happens to your packaging once it leaves your business and ultimately where it ends up.

The main rule with packaging is to use only what is needed to keep your produce in the best condition - avoid using unnecessary layers, keep the weight to a minimum. Try to use packaging that can be recycled or composted, or packaging that is made from recycled material and can be re-used.

Common packaging materials used by horticulture businesses include plastic, glass, metal, wood, paper and board. Biodegradable and compostable options are becoming increasingly popular amongst growers and retailers.

The following pages contain key facts about these common materials - to help you find out more about where they come from, where they end up and what you can do to demonstrate good practice to your customers. The section concludes with a description of some symbols that relate to the types of packaging that are commonly used in horticulture.



PRACTICAL TIPS:

If you deliver to your customers or sell direct it may be simple to take the delivery packaging back and reuse it. If so you need to ensure that it 's made from materials that are durable enough to be re-used - for example plastic delivery trays may last longer than cardboard boxes.

Contamination can be an issue so care must be taken when reusing packaging that is in contact with horticulture products. If in doubt sterilise packaging before use to prevent disease spreading.

If the packaging you use must be left with your customers make sure that it is clearly labelled to identify the material type and to inform your consumers how to dispose of it.

To make it easier to recycle packaging try to avoid multiple layers, glues and staples wherever possible.

Talking to your customers and suppliers about how your packaging is used can lead to ideas for better ways to dispose of or reuse packaging - and can make sure that your packaging isn't just left for your customers to deal with.







CASE STUDY: PHILIP JONES FRUIT AND VEG WHOLESALERS

For almost half a century, this family-run wholesale business has supplied fruit and vegetables to hospitality and retail businesses across South East Wales. They sell around 80-100 pallets of produce per week which is purchased from growers across the country and wholesale markets mainly in Cardiff, Bristol and Holland.

Most of the cartons that the fruit and vegetables arrive in are re-used by the company. Often they are used for delivering produce to their customers or passed on to local farms and growers. Occasionally local people utilise them for storage or moving house.

This keeps everyone happy - their customers don't have to pay for unwanted boxes to be taken away as waste, while the growers don't have to buy extra packaging. The company estimates that re-using packaging saves around £12,500 per year that they would otherwise spend on buying new packaging.

“Re-using packaging is something that we've always done because it stops waste and saves us buying new ones”
Philip Jones, Director.

Plastic

Plastic is perhaps the most commonly used packaging material because it can be manufactured into almost any shape. Plus it is lightweight, moisture resistant and durable.

Plastic is derived from oil and requires an energy intensive manufacturing process. Most plastic is recyclable but the infrastructure for collecting and recycling varies from region to region. So from an environmental perspective the benefits of plastic packaging can be dependent on whether or not it can be recycled locally.

Basically, plastics are either rigid or flexible and there are a number of different types for a wide variety of applications. Horticulture uses include delivery crates, carrier bags, plant pots, punnets, trays, bottles, pouches. Recycled plastic is increasingly used, including for some food packaging.

PRACTICAL TIPS:

- Plastic packaging can provide some good opportunities for re-use. Particularly for transit packaging where delivery crates can be returned and used time and time again.
- Check the regional recycling facilities where your customers are located and if possible adjust your packaging to suit their local needs.



Glass

Available in several colours - commonly brown, green and clear - glass is a transparent and moisture resistant packaging material. The drawbacks of glass packaging are that it is relatively heavy meaning that it can be comparatively expensive to transport and it can be easy to break if it is not protected by other packaging in transit.

Glass manufacturing is extremely energy intensive. Sand, sodium ash and lime are heated to around 1500 degrees C. It can be easily recycled and a percentage of most glass will come from recycled sources. Reusing glass packaging is a good option, for example returnable bottles are reported to be able to be reused up to 30 times.

Glass is a traditional material that is often used to bring added value to products particularly in the retail environment. It is typically used for bottles and jars.

PRACTICAL TIPS:

- If you use glass packaging ask your supplier about the lightweight options that exist. This will save transport costs and uses less material
- In the UK the majority of recycled glass is green so using glass packaging can help support the effect, recycling industry 'prevent waste.'



Heather's Harvest

Hand Made With Love in Shree...



Kashmir Chutney

Spiced, Tasty & Delicious



Metal

Two types of metal are used for packaging. Aluminium which is lightweight and can be flexible, and steel that is heavier but stronger.

Both materials are extremely energy intensive to manufacture due to the raw materials and the fabrication processes involved. Steel requires significant amounts of water and releases high emissions during manufacture.

On the upside both aluminium and steel can be easily recycled without any loss of properties. So significant amounts of these recycled metals are used when manufacturing which means that less energy is required overall.

Aluminium and steel are widely used particularly for food packaging such as trays, cans, and foil pouches. Food sealed in steel cans tends to have a very long shelf life. Reusable metal trolleys are commonly used for transporting horticulture produce such as flowers and plants.

PRACTICAL TIPS

If you use metal packaging ask your supplier about the lightweight options that exist. This will save transport costs and use less material.



CASE STUDY: SEIONT NURSERIES

Seiont is primarily an exporter to England and Europe. 70% of Seiont's production is distributed and marketed in South East England predominantly in the home counties of Sussex, Surrey and Hampshire.

Distribution is based on the high level distribution and return of a trolley scheme, known as Danish Trolleys. The Danish Trolley is the horticultural industry standard for the delivery of pot plants and flowers in Europe.

In this scheme a company supplying plants has trays on trolleys registered to the supplier with a tab register. The trolleys are tagged (using a bar code or Radio Frequency Identification) to individual nurseries to ensure traceability.

Seiont organise distribution with a specialist horticultural haulier based around a Hub in Knutsford. This allows weekly deliveries to all parts of the UK. European deliveries are handled through a Dutch transport company operating from a hub in Aalsmeer. Smaller customers are encouraged to share trolleys with other nurseries or garden centres. If customers give their postcode, Seiont might be able to recommend another customer nearby to share a trolley.

“Customer requirements in our supply chain have changed considerably in recent years with the need to deliver smaller consignments on a more regular basis. This level of service cannot easily be achieved with internal nursery transport, which is often uneconomic, inefficient and much less carbon friendly.

Working with specialist horticultural transport systems we are able to ship weekly to all parts of the UK and Europe reliably and economically. These systems are shared by many suppliers so customers will often receive deliveries arriving on a single truck rather than lots of individual loads”
Neil Alcock, Director



Paper and card

Paper and card can be quite strong and can provide relatively inexpensive packaging options. Both provide good surface area for print and can be recycled into filler packaging (such as shredded paper) or mouldable pulp (such as egg boxes) once they have been used.

They are made from natural and renewable materials - mainly wood pulp - and a high proportion of recycled material is used during manufacture. However the manufacturing process uses a lot of water and chlorine is sometimes used for bleaching which can pollute rivers if not managed effectively.

Paper and card are biodegradable under certain conditions and have good recycling properties. Although layers of moisture resistant materials are often introduced that limits the ability for this.

Typical uses include cardboard boxes, sleeves, bags, labels and wraps.

CASE STUDY: RHUG ORGANICS

Rhug Organics has grown from a trailer on the side of the road to a highly regarded organic farm shop in 10 years.

Meeting organic accreditation requires them to consider their packaging waste so they always try to seek out local suppliers that use less packaging. Thereby using their influence to reduce the impact on the environment.

Fruit and vegetables are supplied loose in cardboard boxes. So consumers can also buy them over the counter in simple paper bags.

The company have recently acquired a compactor which squashes used cardboard boxes and paper packaging into bales that is sold to a local recycling company. On average they produce 8 x 200kg bales per week which will pay for the £5000 compactor in 18 months.

“Good packaging is not as expensive as you might think. It can create a good ethical story. This helps to build customer relationships and achieve payback on your investment.”

Jonathan Edwards, Director

PRACTICAL TIPS :

Paper and card packaging tends to absorb moisture and is not ideal for use in direct contact with food. Waterproof layers are often used but this makes it more difficult to separate for recycling.

If you are using packaging made from paper or card try to avoid using staples and glues because this makes it more difficult to recycle.

Inks used for printing can contaminate packaging when it 's recycled. Ask your supplier to use only biodegradable inks whenever possible.







CASE STUDY: PENLAN PERENNIALS

Established in 1998, Penlan Perennials is a small nursery and has been operating an online mail order business since 2003. From their modest 4.5 hectare smallholding they distribute around 30,000 plants per year to customers across the world including the National Trust and Royal Horticultural Society.

Grown peat-free and organically, many of their plants are native so they don't negatively impact on the environment. Biodegradable coir and fibre pots were tried but found to disintegrate due to the wet climate so plastic pots are used, cleaned and then reused. This enables them to be reused 9 or 10 times on average before they wear out and are sent for recycling.

For mail order plants are packaged by first rolling them in newspaper ends that are supplied by a local printing company, then they are wrapped in a biodegradable plastic sleeve and put in a recyclable cardboard box.

“There are many ways of improving your packaging and improving ways of moving your plants around - it's easier to look at one or two things rather than trying to make changes across the board”

Richard Cain, Owner

Biodegradable & compostable options

The use of biodegradable and compostable packaging is increasing. Some of these materials have been developed to have similar properties to plastic packaging although they can lack the moisture barrier properties of their counterparts. But they are an attractive alternative because they are not derived from fossil fuels and may completely breakdown in the environment, when in contact with micro-organisms, or in some cases with water.

Materials include those made from starch, such as PLA (polylactic acid) which is used to make items include punnets, tubs and films; and cellulose-based films are used for clear film wraps and carrier bags. Some cellulose-based films are home compostable whilst PLA requires industrial composting (often referred to as Anaerobic Digestion or AD for short).

However the lack of industrial composting systems available in the UK has led to concerns about the methane gases produced when these materials are landfilled rather than composted. There are also reports that these materials can contaminate the plastic recycling stream if mixed with conventional plastics.

Furthermore there is an ongoing debate about the merits of using land for growing crops for non-food purposes and the issue of genetic engineering.

Biodegradable packaging should not be confused with **degradable packaging**. Which are plastics with an additive that enables the material to break down into smaller pieces over time. Fine plastic particles can contaminate soil and pollute water and at the time of writing there are conflicting views about its suitability for composting and ability to be recycled.

PRACTICAL TIP Ss

If you use biodegradable or home compostable packaging make sure that the material is clearly labelled as such

Check if it will compost at home or if it requires specific conditions and must be collected

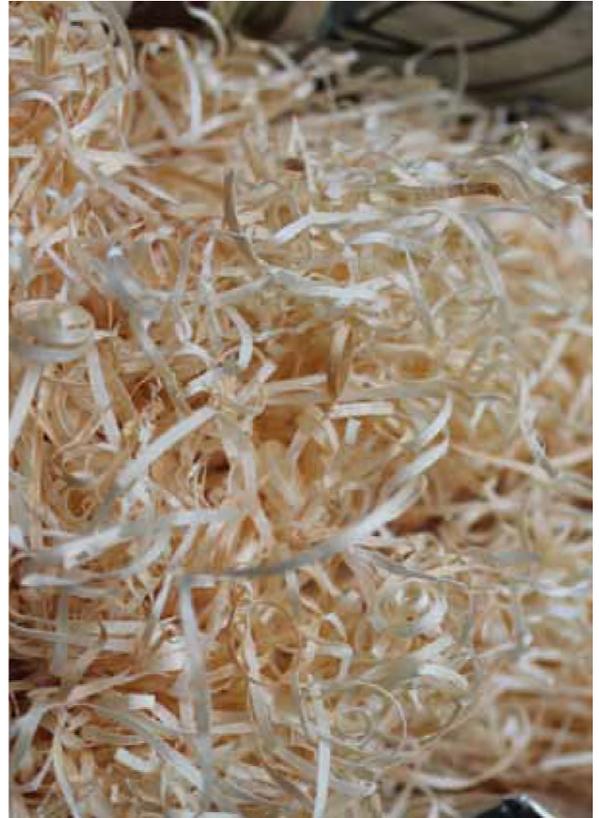
Are genetically modified (GM) crops used in its manufacture or is it made GM free?

Wood

Wood makes strong, durable and natural packaging. It is a fairly rigid material which restricts its use.

It can be fairly easily manufactured through cutting, planing and fixing together. Packaging from wood is commonly reused, it is biodegradable - although not ideal for home composting due to the time it takes to breakdown, and in specific conditions can be recycled into board or mouldable composites.

Wood packaging has largely been replaced in most applications but it is still commonly used for fruit crates and pallets. To a lesser extent it is used in retail for presentation boxes.



CASE STUDY: VILLAGE VEG

Located near Caernarfon, Village Veg have grown and delivered seasonal vegetables to over 100 local customers within 15 miles of their 13 acre farm since 2009.

Their success is based on providing locally grown vegetables that taste better and last longer because they are delivered as soon as they are picked. Being an environmentally friendly company is another part of their marketing mix - and they've found that reusing packaging saves them money.

They tried doing deliveries using more conventional packaging such as cardboard boxes but ran up costs in replacing them once they got wet. They found wooden boxes to be ok, but - at £3-4 each along with the additional cost of fitting racking in the delivery van - they were simply too expensive, particularly if their customers didn't return them for reuse.

Hessian sacks - a renewable and natural material - provided a cost effective solution. 'Veg sacks' are delivered weekly to customers and collected the next. In 3 years many of these sacks are still lasting.

Running a regular delivery service means it's simple to collect and reuse packaging, but the company has also found that it helps build loyalty with their customers and attracts others.

“Environmentally friendly packaging doesn't have to be more expensive - in fact for us it is a much cheaper alternative” Emma Duffy, Village Veg

Packaging Symbols

Symbols are used to communicate information quickly and simply. The problem is that with so many around it can become confusing.

Here we've described some of these symbols and how they relate to packaging that is used in horticulture. It's not an exhaustive list but will explain what these mean and where they are used.



The **Wineglass and Fork** is an official symbol that is carried by packaging intended for contact with food. Alternatively the words 'for food contact' must be shown unless the food contact use is obvious. This is EC regulation.



The **Steel Recycling logo** is used for packaging that is made from recyclable steel



The **Mobius Loop** indicates that packaging is recyclable. Sometimes a number is included to show the percentage of recycled material it is made from. Its use is voluntary and is not checked.



The **RESY-Logo** is used for paper and corrugated card that can be recycled or reclaimed



The **On-Pack Recycling Label** scheme is used by retailers and brand owners on packs to provide clear recycling information to consumers



This logo is used to show that paper is manufactured from 50%, 75% or 100% recovered fibre (not including mill waste). It is guaranteed by the **UK National Association of Paper Manufacturers**.



Plastic Identification Symbols identify the different types of plastic material and enable them to be sorted for recycling. These symbols are moulded into the material during manufacture.



This logo is used to show that the material is sourced from woodlands that are sustainably managed. The scheme is accredited by the **Forestry Stewardship Council**.



This shows that glass can be recycled. All glass is recyclable so it's not always vital that this is included on glass packaging.



The **Seedling Trademark, European Bioplastics** is used for materials that are certified industrially compostable according to the European Standard EN 13432



The **Aluminium Recycling** logo is used for packaging that is made from recyclable aluminium



The **Green Dot** is not a recycling symbol. It holds no specific meaning for UK consumers but is used in other European countries to demonstrate contributions to a packaging recovery system.

SECTION 3:

Packaging checklist

How you use packaging and the type of packaging you use are important aspects that can help your business stay ahead of legislation, attract more customers, demonstrate a responsible approach or simply save money.

This checklist summarises many of the aspects that are covered in this guide. It's not intended to be an exhaustive 'must do' task list. But it will serve as a quick reminder to help you consider the type of packaging you use and ways to overcome some of the challenges you may face.

PACKAGING THAT IS FIT FOR PURPOSE

The produce that your packaging contains, the volumes that you require, and how your packaging will be used - by you, your customers and others along the supply chain - will help you decide on appropriate packaging.

___ Can packaging be used for more than one purpose (for example in growing, transport and retail)?

Does it adequately protect the produce it contains?

----- Will it ensure that the produce arrives with the customer in the best possible condition?

Does it need to be tamper proof?

Does it provide value for money?

SOURCING AND STORAGE

Finding a reliable packaging supplier that can provide what you want at the right price is vital.

Is it widely available?

Is the packaging available from a local source?

Do you have adequate space to store the packaging?

___ Can you quickly obtain new supplies when you need them?

SYMBOLS AND LABELS

Packaging materials are easily identified if they carry the appropriate symbols - check this with your packaging supplier. Consumer information that you display may be subject to statutory requirements - check this with Government advice. Your brand and marketing information will be specific to you - so a graphic designer may be useful here.

___ " Does it come supplied with symbols to identify the material type? Are they easy to read?

----- Will the packaging adequately display your brand and marketing message?

Have you included information for its disposal (for example is it recyclable or compostable? is it to be collected or returned by your customers ?)

If the packaging is being re-used, have all previous labels been removed?

ENVIRONMENTAL CONSIDERATIONS

Packaging uses natural resources such as materials, energy and water during its manufacture, use and disposal. Business costs for fuel, distribution, waste collection and disposal are increasing.

Is it made from a single material?

- If it's made from different parts (labels, layers etc) - are they easy to separate for recycling?
- Have you made sure only to use packaging layers that are absolutely necessary?
- Have you taken steps to eliminate unnecessary glues, staples and inks?
- Can you use lighter weight packaging?
- Have you considered home compostable options? Will they function as well as conventional packaging?

COLLABORATING WITH OTHER BUSINESSES, CUSTOMERS AND SUPPLIERS

Working with others, sharing knowledge and experience may help overcome some of the challenges that you might be facing.

Have you asked your customers to suggest ways in which improvements in your packaging may help them?

Have you considered establishing a take-back scheme with your suppliers and customers?

Have you considered sharing resources with other local businesses (eg. for distribution, storage space and bulk purchasing)?

LEGISLATION AND ACCREDITATION

Regulation exists to limit the amount of packaging waste that is generated. Some accreditation schemes also have packaging standards.

___ Have you checked that the packaging you use meets these requirements?

Have you asked your suppliers and customers if the packaging they use meets these requirements?

Are you are part of a voluntary or accreditation scheme (such as the Soil Association who have published guidelines on packaging use)? if so have you checked that you meet their requirements?

LEGISLATION: ISSUES SPECIFIC TO PACKAGING THAT WILL BE IN CONTACT WITH FOOD

Food packaging is subject to more specific, additional requirements to ensure that products reach the consumer free from contamination and pose no risk to human health.

Is it made from approved food grade material?

“ Does it carry the ‘wine glass and fork’ symbol or ----- written information to indicate this?

“ Have you got a ‘declaration of compliance’ for food ___ grade material from your packaging supplier?

BENCHMARKING

Comparing your packaging with what others are using can be a straightforward way of generating new ideas or simply satisfying yourself that you're ahead of the game.

Have you looked at ways your competitors are packaging their produce?

I lave you researched the marketplace to see what is regarded as best practice?

Could your experiences of sourcing and using packaging help other small businesses in the future? If so please get in touch with Horticulture Wales who can discuss this with you.

More information can be found within this guide and the links in Section 4 provide further reading.



SECTION 4:

Further reading

Every effort has been taken to ensure the information contained within this guide is accurate and current at the time of writing. However every business faces unique challenges, many have individual packaging needs and inevitably things do change - technology advances, new innovations happen, suppliers come and go.

So we hope that you use this guide alongside your own research to keep up to date and help you decide on the packaging that works best for your horticulture business.

The following web resources are provided to help you on your way. Click on the links to access these external websites.

This link contains all UK Government legislation. If you're looking for comprehensive information about **packaging regulations and landfill tax** this is the place to search: www.legislation.gov.uk

If you'd prefer more practical advice this link provides a useful summary of the key issues. www.gov.uk/packaging-waste-producer-supplier-responsibilities

For advice on statutory **food labelling & food grade material** this link provides a practical overview: www.gov.uk/food-labelling-and-packaging/overview

Business Wales is the Welsh Government's business support service. It offers advice on starting and running a business and providing access to support services from the public, private and third sectors. Search their website for advice on packaging: www.business.wales.gov.uk

Many regions in Wales offer advice and support to **land based businesses** through rural development networks. The Farming and Countryside section of the Welsh Governments website has searchable information: www.wales.gov.uk/topics/environmentcountryside/farmingandcountryside/?lang=en

Cywain offer mentoring and support for agricultural producers to add value to primary produce: www.menterabusnes.com/en/cywain

The **Food Centres** provide technical help to the Welsh food industry: www.wales.gov.uk/topics/environmentcountryside/foodandfisheries/supportforfoodproducers/foodcentres/?skip=i&lang=en

WRAP are a UK Government funded organisation to encourage **waste recycling and resource efficiency** in business including information on packaging: www.wrap.org.uk

Books, reports and publications that have provided valuable research for this guide are referenced in Section 5.

SECTION 5:

Acknowledgements

In writing this guide research has been taken from a wide variety of sources. Inevitably there are too many to list them all. We would like to express thanks and specifically to acknowledge the following:

Welsh horticulture business

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- Vicky Cooper from Penrhiw Herbs for your time and feedback in providing detailed information about your journey to sourcing packaging.
- Every one of the sector businesses that responded to our Welsh Horticulture Packaging Survey - resulting in a 78% response rate - and giving us an accurate picture of the challenges the sector is facing in relation to packaging.

Books, reports and publications

The following have provided valuable sources of reference:

- Reduce, Reuse, Recycle. A Guide to minimising the environmental impacts of packaging, Chris C Brooks and Kate Vrolijk, Soil Association 2006

- Sustainable food packaging: biodegradable and compostable options 2007, Catherine Creaney, Campden and Chorleywood Food Research Group
- Why shrink-wrap a cucumber? The Complete Guide to Environmental Packaging, Laurel Miller & Stephen Aldridge

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HORTICULTURE WALES

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Welsh Government



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