A Nuffield Farming Scholarships Trust Report

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Cherries: the late season opportunity

Jan Redpath

May 2017

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A Nuffield (UK) Farming Scholarships Trust Report

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Inspiring passion and potential in people."

Date of report: May 2017

Title	Cherries: the late season opportunity
Scholar	Jan Redpath
Sponsor	Malcolm Isaac NSch and the Royal Highland and Agricultural Society of Scotland
Objectives of Study Tour	To research the challenges associated with season extension in cherry production. To bring back best practice as to how these challenges are being overcome in other parts of the world that have successfully extended late season cherry production.
Countries Visited	Chile, New Zealand, Australia, Netherlands, Norway, Canada, USA, UK
Messages	Late season cherries can be produced successfully and profitably in climates as demanding as Scotland's. This study found that we should not be afraid to use specialised cherry covering systems. Deciding on plantation layout and pruning for the required tree structure matters from the first stages of tree formation. It's vital to choose a system prior to establishing the plantation, with an end in mind at that point. Growers should find a system they like and can replicate, and try to avoid mixing sources of advice and techniques during the formation years. Lastly, it's more important to grow good varieties that work and can store well, rather than looking for the very latest variety that then may give inferior quality, production, and not even store as late as a better earlier variety. As a final point, the industry must work on encouraging new entrants into cherry production: not only from top and soft fruit backgrounds but also from broadacre arable farming systems. Partnerships that allow experienced cherry growers to produce on available arable land may balance the types of risk faced by the new entrant.

EXECUTIVE SUMMARY

This study tour was about extending the cherry season in the UK to capitalise on the late season market where prices are higher than in the main season. This market is primarily supplied from expensive, long distance imported fruit or left undersupplied. The study shows that there is a significant opportunity to extend the cherry season in the UK, and that this can be done both successfully and profitably.

The countries chosen reflect the furthest southwards and northwards latitudes in the cherry seasonality calendar, which are actively engaged in trying to extend their own seasons later to capitalise on what could be an open marketplace globally.

With limited knowledge or experience of cherry production in Scotland, one of the key parts of the study was to establish what the challenges might be, as well as how these are being overcome elsewhere; and finally what we could take home to successfully extend the season.

Practical cherry growing challenges include those resulting from climate at higher latitudes. Varietal challenges exist in terms of the most suitable late season variety. Additionally there are specific challenges related to non-cherry producers converting into cherries from other horticultural or arable systems. For example potentially conflicting advice can be offered to the inexperienced ear; different methods can be inadvertently mixed; and the impact of pruning methods on different varieties may not be fully understood.

Visits to Norway and Tasmania in particular showed that climatic adversity can be overcome with robust covering methods. Ongoing research in Europe and North America is likely to lead to better later varieties. I additionally noted that storage techniques exist that enable “not so late” varieties of known potential to give a safe option to season extension. Research and development in all regions I visited successfully demonstrates straightforward plantation and pruning arrangements that can give consistent results if adhered to from the start, and growers in any given region are never too far from being able to see examples of this in conditions similar to their own.

This study found that we should not be afraid to grow cherries under covering systems developed specifically for cherries – these have been proven in some demanding climates. New entrants to late cherry production must pay great attention to the pruning requirements, especially during tree formation. It’s vital to decide on a system prior to establishing the plantation, with an end in mind at that point. Lastly, we can grow great varieties that are known to work, and also store them well. This can be better than growing the very latest variety that may have other lesser characteristics and may not store so well.

The industry needs to find means of encouraging new entrants from outwith soft and top fruit to convert into late season cherry producers. The industry should not rule out collaborations between established producers in mainstream regions with those having land and resources in newer cherry production regions, as this could also enable growers with land but lower appetite for risk to make a sound move into such a high risk enterprise.

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1. PERSONAL INTRODUCTION

I currently live on the east coast of Scotland, the sunshine coast! I've been a mad keen grower since I was eleven and dug up my parents' back garden to grow veg, followed by their neighbours' and relatives' gardens – selling the produce back to them for pocket money.

I've worked professionally in fresh produce since I graduated in Agricultural Science from Edinburgh University in 1998, working in all sectors from veg to fruit to retail. This has given me the chance to travel the world and to see a lot of different production methods of fruit and veg and rare types of produce. I additionally took on an MPhil in Plant and Soil Science during my first job in order to research organic potato production.

I currently work in soft fruit - berries - and this has to be without doubt the fastest moving job I've ever had. I'm a senior manager responsible for delivery of technical advice to a group of 20 growers and managing a team of 3.

In my personal life I'm still a mad keen grower, "teching" up my small greenhouse to grow a long season of chillies, tomatoes, herbs and so on whilst giving the neighbourhood a distinct fluorescent glow during the dark winter nights.

The author, Jan Redpath

Additionally I'm keen on walking and anything to do with water – swimming, sailing, surfing and have recently discovered the hobby of home-brewing. As well as this I enjoy spending time with my two-year-old son Joshua and ten-year old daughter Lottie whom I hope will share my enthusiasm for all things outdoors.

2. BACKGROUND TO MY STUDY SUBJECT

This project focuses on sweet cherries, and the use of the word cherry or cherries from here on relates solely to sweet cherries unless specifically stated otherwise.

I had never had any involvement with tree fruit production before. Broadly my subject came around because soft fruit production in Eastern Scotland had reached a plateau of demand and growers were looking for alternatives, and potentially niche alternatives rather than large scale production.

One of these alternatives was to try to emulate berry production which has been very successful in extending its season, but apply the technology to cherries.

The ability to use existing know-how regarding product handling, irrigation and soils that, due to disease pressures, may no longer be fit for berry production was definitely factored into my thought process of what alternatives might suit those growers. That and the fledgling interest from at least two of the growers that I work with and the lack of any specialised knowledge within my colleagues, as well as two separate requests one summer from major customers along the lines of "*Got any cherries, we're desperately needing some*?" sparked off the lightbulb moment that suddenly made cherries interesting to me.

Applying for a Nuffield Farming Scholarship to enable me to travel abroad and see best practice in many different countries was an obvious route to take. When my application was successful I planned the study tour shown in the next chapter.

3. MY STUDY TOUR

My initial proposal had, like many things, been drawn together fairly close to a deadline (in this case the closing date for my application for a Nuffield Farming Scholarship). The general subject was a global study of best practice in cherry production, but the focus of the proposal was more specifically centred on whether late season opportunities existed that could be capitalised upon by growers in "late" regions of the UK.

The country list researched initially for the outline travel plan had been picked fairly arbitrarily from the main cherry producing areas: the Middle East, USA, Europe and South America. Iran was a definite focus of the original travel plan as it is commonly listed as the world's third largest cherry-producing nation.

On conducting further initial research into the ideas around extending cherry seasonality, it became apparent that more extreme latitudes were the order of the day and there were plenty of examples of successful season extension for sweet cherries in both the most southerly and the most northerly cultivatable regions of the world.

The timing of my study tour (Table 1 below) therefore also moved in emphasis: the Nuffield Farming Scholarship awards for my year group were formally presented at the November 2015 conference, and I was already frantically working on travel plans that would allow me to take in the cherry season of the southernmost regions of the southern hemisphere as early in the New Year of 2016 as possible. This gave the added advantage of boosting my personal knowledge ahead of Scotland's cherry season. It also meant a large part of my time away was during the quiet months of January and February.

TABLE 1 – STUDY TOUR DETAILS

When	Where	Why
January and February 2016	Argentina, Chile (2 weeks)	• Among the most southerly cultivable latitudes in the world, with rapid expansion in late-season production for supply globally.
	South Island New Zealand (1 week)	• Renowned orchard industry in Central Otago, late season cherries have all but replaced traditional stone fruit and top fruit orchards.
	Tasmania (1 week)	• Specific focus on high quality late-season fruit production for export.
	Western Australia (1 week)	• Homeward stop to visit diversified produce businesses in a rapidly expanding production area for high value produce
	continued overleaf	

May 2016	Netherlands (3 days)	• International Stone Fruit Conference, and visiting tree nurseries producing the young stock for the industry
July 2016	Kent (2 days)	• Traditional cherry production heartland, with centres of excellence in all types of fruit research
August 2016	Netherlands (2 days)	• Visit to see progress of cherry variety trials at harvest
August 2016	Norway (3 days)	• One of the world's most northerly production regions for orchard fruit, with more similarities to Scottish climatic challenges than other UK regions
October 2016	Canada and the USA (3.5 weeks)	• Glasshouse & high-tech horticultural conference in Ontario (Canadian Greenhouse Conference) • World renowned cherry plantation research in Michigan, Washington, Oregon and British Columbia. • Late season cherry production in British Columbia.

4. A BRIEF HISTORY OF CHERRIES

4.1 Cultivation history

An estimated 2.25 million tonnes of cherries are produced and consumed around the world every year. Using the latest available figures[1], this volume has risen by 33% over the last ten years. It is estimated that around 405,000 hectares[1] of the world's agricultural land are devoted to cherry production and that this has increased by nearly 20% over the last ten years[1].

Cherries of today owe their roots to an ancient heritage. In some cultures this centred around the fruit and in others around the blossom itself – in fact, in Japan, a public holiday is declared in each region on the first day that the cherries blossom.

The word "cherry" derives from the Latin name Cerasus, a region in ancient Greece which is now the town of Giresun on the shores of the Black Sea in Turkey[2]. The origin of the species itself is widely accepted as being somewhere in ancient Greece or Turkey.

Pliny the Elder reports that cherries, having not quite reached Italy in 74BC, then went through a rapid uptake period in southern Europe, and within 120 years had reached Britain too. Literature from this era already mentions varieties and their quality and taste characteristics, and a special note was made that the cherry loves cold localities and a site exposed to the north[3].

Since then, cherries seem to have followed a real up-and-down production cycle. In Roman times, after an initial peak, there was a reduction in cherry cultivation, with the next known major re-introduction being in the 16th century, supposedly by the gardener to Henry VIII, Richard Harris in Teynham[4,5]. This explains why Kent became the cherry capital of the UK at that time.

It is then noted that between the 16th and 18th century prices declined and land was taken out of cherry production. By 1820 prices were high again and it became popular to intercrop with strawberries[4] – which presumably took away some of the productivity barriers faced by any new orchard. Inter cropping as a means of adopting agro-forestry on farms is not my specific subject area, but is explored in detail in a number of recent Nuffield Farming reports.[6]

4.2 Medical benefits of cherries

Medical benefits have been frequently reported in literature. Pliny the Elder reported in terms of clearing the bowels and even curing gout, and medicinal benefits are mentioned in Circa Instans by Mattheaus Platearius in the twelfth century, a widely regarded medical text of the era[7]. A historic illustration of a cherry from that publication is shown in that publication and reproduced in figure 1 shown at top of next page.

(See Figure 1 – Cherry trees by Robinet Testard – overleaf)

[1]*Note: All references are given in full at the end of this report*

FIGURE 1 – CHERRY TREES BY ROBINET TESTARD[8]

In present day literature, a lot of the focus on the health benefits derived from fresh produce is related more specifically to known "superfoods", including, for example, blueberries, and excluding cherries. It is debatable whether health benefits relating specifically to fresh produce are discussed enough by the media, relative to the frequent publicity of the more trendy "superfoods" label. It is also necessary to have solid scientific evidence and actual "proof" that the individual food in question is indeed the cause of the "improved" health status in order to advertise such benefits on packaging or in advertising.

It can be questioned if this missing health link is the reason for a much lower rise and less prevalent consumption of cherries relative to known "superfoods" such as blueberries that have high levels of anthocyanins. Some may perceive disbenefits from the high sugar levels contained within the product, and it's also sometimes said that cherries lack the "convenience" or "kid's-lunchbox-snackable" factor of blueberries or raspberries, as they contain a stone that must be carefully eaten around and discarded. These points alone are not enough to explain the relatively vast differences in consumption between the UK and two other selected countries as shown in Table 2 below. These figures illustrate the size of the potential opportunity in the UK market for cherries.

TABLE 2 – CHERRY CONSUMPTION: SELECTED COUNTRIES

Country	Annual cherry consumption per head
Poland	>800g[9]
USA	752g[10]
UK	277g[11]

It should be noted that the figures for UK and USA are crudely based on tonnage production less imports and exports of whole cherry, and not processed cherry products for which no easily accessible data exists.

4.3 Recent production history

Europe is currently the biggest cherry producing region in the world. Turkey is the world's largest producer of cherries and is classed as "Asia" in the data presented below. Figure 2 shows surface area change (from now on in this report referred to as "plantation" or just "area") in the main cherry producing regions of the world.

FIGURE 2 – WORLD CHERRY PLANTATION AREA (HA) BY REGION[1]

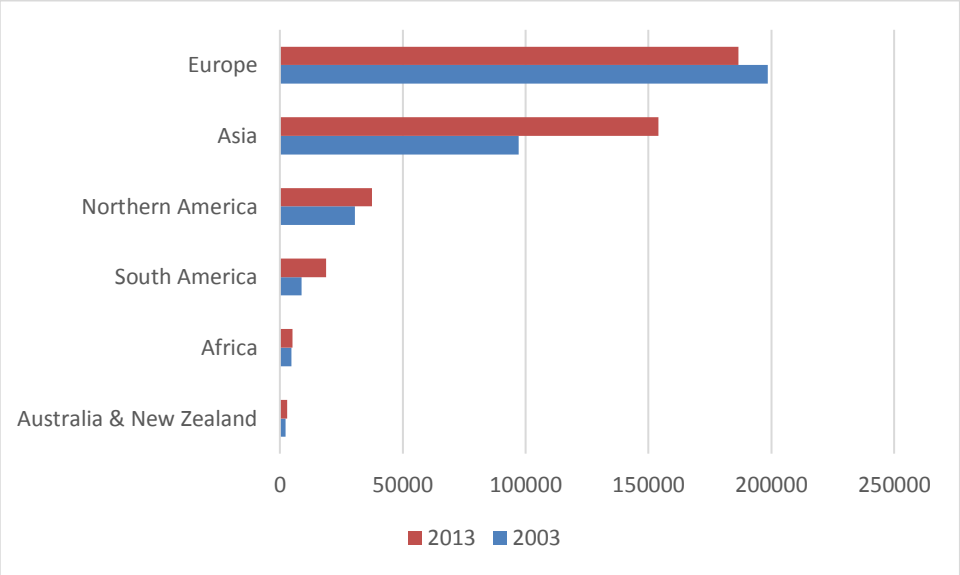


Figure 2 above shows that cherry production has increased significantly in each production region over the most recent decade of available figures, with the notable exception of Europe. This appears to come from large proportionate declines in the Russian Federation and Eastern European countries, but, at the same time, plantation area remained fairly static in Western Europe. Even within Western Europe large variances between countries are masked within the broad region data. When this is broken down into the trends of the top 5 EU producing nations and the UK for comparison (Figure 3 on next page), over the last 10 years of data there are significant increases in several countries and the largest increase is in the UK, with Spain and France showing large reductions.

(See Figure 3 on next page – percentage change in cherry surface area in EU Top 5 countries, and UK)

FIGURE 3 – % CHANGE IN CHERRY SURFACE AREA IN EU TOP 5 COUNTRIES, AND UK[1]

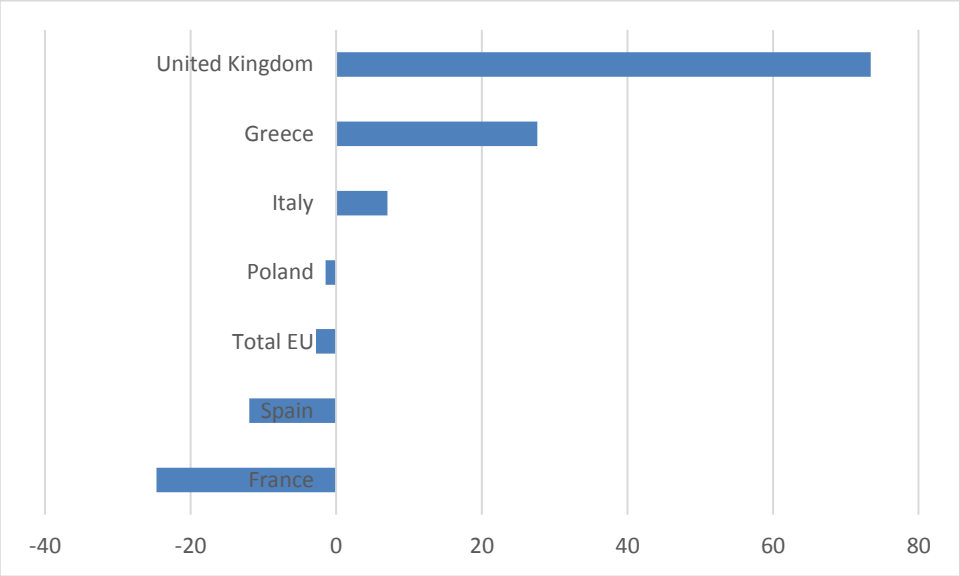
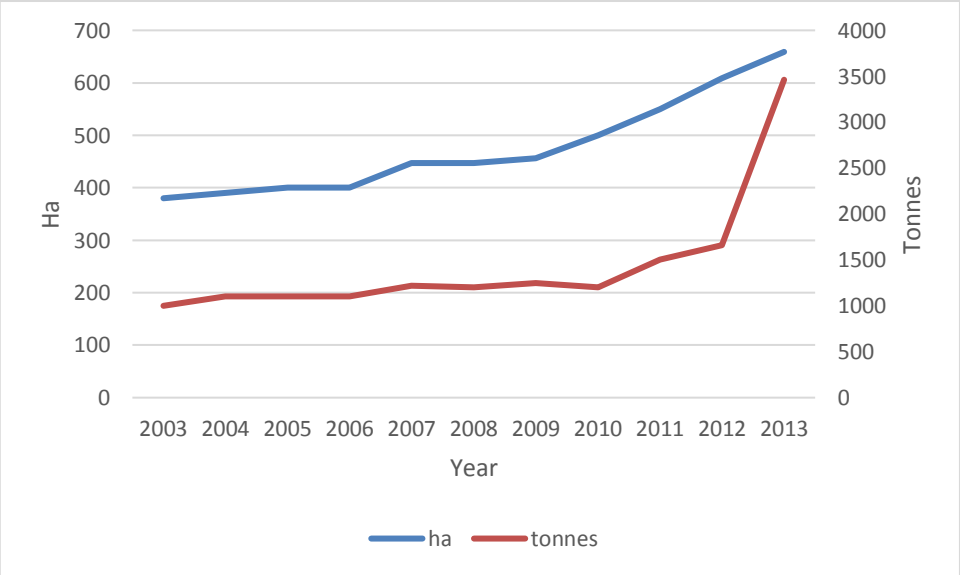


Figure 4 below shows steady continuous increase in UK plantation area over the last 10 years, equating to a significant 73% in area terms and well over a 3-fold increase in tonnage terms. This trend shows no sign of levelling off in the FAOSTAT data analysed.

FIGURE 4 – UK CHERRY PLANTATION AREA AND PRODUCTION GROWTH[1]



The UK cherry industry had historically been in decline since its heyday in 1962 when over 20,000t per annum were produced from some 4500 hectares[1]. It is clear from more recent data that opportunities to respond to increasing demand are very clearly being taken by the UK industry. The yield figures

derived per hectare are much lower than would be anticipated. This could be explained either by the lag time between planting new orchards and attaining peak yields, or by the level of farm gate and direct selling to consumers whereby not all tonnage is captured in the official FAOSTAT data.

4.4 Chapter summary

The key points raised in this chapter are:

- Cherries have an extremely long agricultural history
- Cherries have had medical benefits reported throughout history
- Cherry production appears to be expanding nearly the whole world over
- Cherry production had peaked and declined in the UK more than once over history
- Cherry production is now showing significant growth in the UK
- If cherry consumption per capita in the UK was equal to that of Poland or the USA, a huge growth in demand would result

These points help to illustrate both the reasoning for, and scale of, the opportunity to expand cherry production.

5. CHERRIES: THE LATE SEASON OPPORTUNITY

Cherries the world over are a very short season crop, most varieties only cropping for a three-week period. Sequencing of early to late varieties has been used in order to span the supply season on any given farm. Even considering this, the season in total is extremely short in each given geographic region, around two to three months or so. This contrasts sharply with both top fruit production (apples and pears) where storage techniques allow a twelve-month season, and soft fruit production, where advancements in varietal choice and growing techniques effectively have led to a five or six month season.

For cherries this means that there is inevitably a short timeframe when the main mid-season varieties are all producing a volume of ripe fruit in any given region, and as this mid-season peak moves to higher latitudes across the summer there is the added cumulative effect of one country overlapping in season with the next country in line. This is illustrated in Figure 5.

FIGURE 5 – CHERRY SEASONALITY IN SELECTED COUNTRIES

	May				June				July				Aug			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Spain																
Italy																
France																
Turkey																
Greece																
Poland																
UK																

Figure 5 illustrates the knock-on impact of the seasonality effect through Europe. It also shows that there is a disproportionate opportunity to be able to produce earlier in the first country and later in the last, especially when the next country to have availability of ripe fruit is on another continent or even another hemisphere with resulting expensive freight costs driving market prices higher.

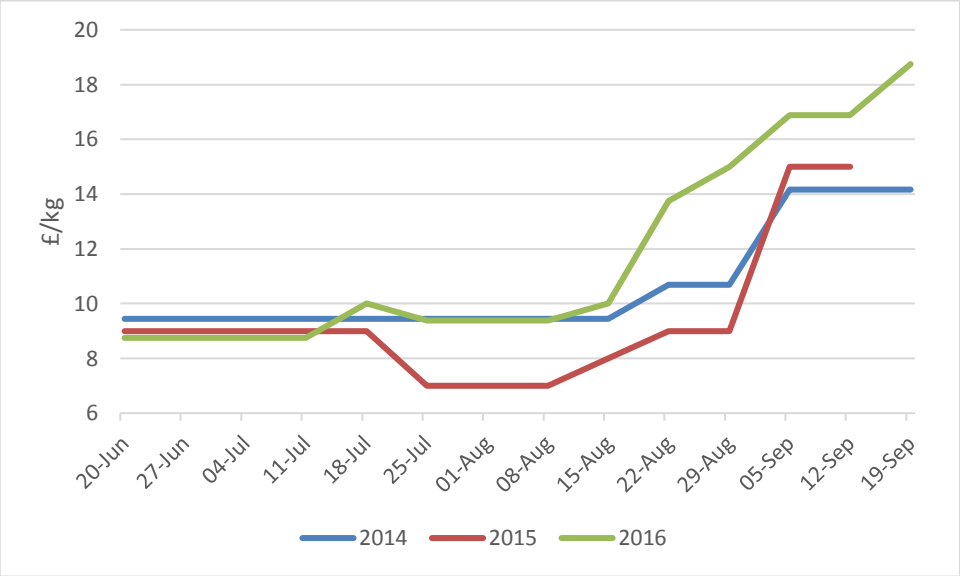
An example of the price rise at the end of the seasonality of the European production region is outlined in Figure 6 on next page. This is shown as retail prices, but it can be assumed that the retail price within fresh fruit tracks the farm gate price/or the other way around, depending on whether the market is rising or falling.

Across the three years of data, the only period in all three years to be supplied entirely from UK fruit was from just after mid-July to around mid-August. The price benefits of being *earlier* were non-existent in 2 of the 3 years as relatively local imports were peaking from Bulgaria and Spain.

The price benefits of being *later*, however, were at times substantial, and price increases already start around mid-August, peaking at almost double the main season price by mid-September. **This leaves no doubt as to the value of the opportunity presented by season extension.**

(See figure 6 on next page – retail prices in various months)

FIGURE 6 – UK CHERRY SEASON PRICE EVOLUTION[12]



So the market is there. In the next chapter I look at the challenges associated with extending the UK cherry production season.

6. CHALLENGES ASSOCIATED WITH EXTENDING THE UK CHERRY SEASON

This study looked at the scope for late season extension of cherry production by moving to geographic regions more traditionally associated with top fruit or berries. A key part of the study involved establishing what the challenges would be in producing late-season cherries in the more extreme latitudes, and in comparison to the traditional fruit industries found in those regions. These challenges are discussed here as a precursor to the case studies showing how these might be resolved, and as a precursor to what we might bring back for our own benefit.

The challenges presenting themselves are therefore twofold:

- The challenges associated with producing the cherries themselves, late season in extreme latitudes
- The challenges associated with converting from top fruit (pome fruit) or soft fruit (berry) production to cherries

6.1 Challenges and risks with producing late season cherries

6.1.1 Physiological challenges

As cherries are relatively immobile and require a long establishment period to root and grow. They do not lend themselves to the sort of season manipulation used in strawberry plants to suspend their development and enable cropping sequences to be planned from planting dates. Additionally they do not fruit on very young wood so seasonality cannot be readily manipulated by any potential cultivation methods such as cutting back and re-growing wood for fruiting at a specified time of year, as can be used on cane fruit.

This means there are very limited options for "delaying" a cherry season: ranging from managing varietal type or crude control of micro-climate by choice of a covering system that allows less heat entrapment whilst still keeping the crop rain-free; through to limited use of technical solutions such as hormonal treatments that delay the ripening of the fruit, or specialised controlled-atmosphere storage of the ripe berries with the resultant potential for losses during the storage period due to quality deterioration.

6.1.2 Practical challenges identified during the study

Some of the challenges in higher latitudes where fruiting season is "late" are:

- **Day-length** which is already significantly reduced by the time fruit is ripening. This means that fruit is ripening relatively much later than the summer solstice in lower latitudes, and therefore much closer to declining temperature/day-length conditions. This presents morning dew problems resulting in more humidity, and moisture issues that affect quality. Shortening day-length could affect ripening and flavour.

- The combination of shortening day-length and temperatures dropping also gives much less **regenerative time post-harvest** for the tree itself before winter comes. This has a knock-on effect on the potential for summer post-harvest pruning techniques (pruning is considered a combination of strategies involving mid-season, post-harvest summer pruning, and winter pruning).

- These regions are generally wet which increases the prevalence of bacterial canker within the orchard therefore increasing tree death over time.

These challenges go a long way to explain why gaps in the market late-season currently still exist, when in many other high-value fruit types they have already been very successfully and lucratively filled to provide fresh fruit in-season for at least 6 – 8 months per year even in extreme latitudes.

6.1.3 Varietal challenges identified during the study

Late-season varieties have met with varying degrees of success and some scepticism in the countries I visited. A commercial barrier to obtaining some varieties is that, like many fruit types, they may be subject to conditions of exclusivity, licensing or "clubs" where growers have to be a member of a particular marketing organisation in order to have access to this type of plant material.

Late season self-fertile varieties can give mixed results owing to challenges with tightly clustered fruit in damp cool mornings. This can lead to more issues with storability and rots/mould that can outweigh the benefits of the whole exercise. There are however some new late season varieties coming through in Europe that are in trials at the present time. These have long stalks and less of a clustered effect, which means that there are less problems with mould developing during the humid mornings common at the time of year. Additionally they are likely to be unrestricted in terms of who can buy the trees, so quite suited to emerging producers who don't have the critical mass to be part of club/exclusive varieties.

6.2 Challenges and risks in converting from soft fruit or top fruit identified during the study

6.2.1 Pruning expertise

Being a tree crop the expertise for pruning cherries is not inherently embedded in the main berry producing region of Scotland. This issue relates not only to the professional expertise but also the on-the-ground skills of those on farm who will be undertaking those operations in the field.

Even in regions of the UK with a prevalence of top fruit production, the methodology of how to prune may be much better understood than in soft fruit regions, but the detail of the types of pruning responses required and expected from particular cuts, branches, and buds will elicit very different effects even across individual cherry varieties and rootstocks.

6.2.2 Production under traditional tunnels

By its nature, soft fruit is produced for the most part under cover. Usually this involves tunnels, some of which are "permanent" where the plastic stays on all year, and some are temporary where the plastic is applied just for 3–6 months as required during the year.

Cherries need to be covered in the UK climate to protect against rainfall which causes bacterial canker on the trees and splits on the fruit; and an added benefit is to protect against frost during flowering. However, the types of covering commonly used on soft fruit have several challenges when employed with cherries. The main challenge is the height to the plastic – which may be sufficient in the middle of the tunnel, but planting a single row in the middle or highest point of a 6 or 8-metre-wide tunnel is not viable; and so with a normal two-row system the cherries quickly reach the sloped edge of the plastic.

The skill set and expertise in covered production is strong in the soft fruit industry, but growers, having become familiar with the level of resilience and risk in the tunnel styles that they know best in their own wind and snow conditions, are likely to fear the risk of using alternative covering systems. That said, the challenges of having to adapt to covering systems from uncovered pome fruit are potentially quite significant indeed, as would be the costs faced – which the soft fruit grower would face regardless of choice of crop type. On the other hand, the pome fruit grower converting into cherries would probably be more willing to take on the covering most suited rather than having any preconception about tunnel style.

6.2.3 Crop nutrition

Growers familiar with soft fruit would need a greater understanding of nutritional requirements and timings for tree fruit crops such as cherries. The technology and terminology across soft fruit and tree fruit would largely be the same as for cherries, so infrastructure in terms of pump-houses, drip irrigation, fertigation and control systems would already be understood and in place on most of the farms making the choice to convert to cherries.

6.2.4 Prediction accuracy

Soft fruit relies greatly on very accurate weekly, and then daily, crop predictions to maximise sales opportunities whilst not letting any customers down on committed daily volume. Once in season this can be done with +/- 10% accuracy weekly over a long season, but cherries have an extremely short season and, whilst total volume accuracy may be accurately estimated as harvest draws near, timing and the impact of being one week late on a 2-3 week pick could affect customer and price expectation quite significantly.

Top fruit growers on the other hand are dealing with a long-term stored product where the harvest-time impact of daily inaccuracies in volume are unlikely to have any immediate effect on ability to meet customer demand, and so monitoring daily and weekly harvest predictions may be more of a new challenge to such producers.

6.2.5 Critical mass

Although the late season opportunity is significant, it is also one in which growers can very quickly be faced with "missing the boat". Security of supply once commitments have been made is critical. Producing a small volume that is more likely to be overlooked by major retailers means that continuity of season is key. In practice this means continuing on directly from the main season producers, not allowing a gap or break to develop whereby imported volumes are then booked and secured by retailers: literally synonymous with *missing the boat!*

The next chapter takes a look at those parts of the world where late cherries are currently produced.

7. WHEREABOUTS IN THE WORLD ARE LATE SEASON CHERRIES PRODUCED CURRENTLY?

In the previous sections, it's been possible to see exactly why there is a late season opportunity, and also the challenges that exist when trying to produce so late.

Whereabouts are late season cherries currently being produced? This was a key question to understanding the potential back home and to understand how these challenges might be overcome.

Figure 7 shows a selection of the main late-producing cherry regions. These are generally around the 40°–46° latitude Southwards, and 50° North in North America, and above mid-50°s to 60° North in Europe with its beneficial gulfstream climate.

FIGURE 7 – REGIONS PRODUCING LATE-SEASON CHERRIES

As a consequence of their unique location and seasonality, most of the countries producing late season cherries are also exporting to other parts of the world. This is an additional opportunity that must not be ignored by producers in the North of Europe where soft fruit is largely targeted at the home market: so there may be even larger opportunities/market gaps to be fulfilled by export.

Also of note is that the product is far more durable than most berry products so there should not be the same fear of exporting much further afield.

Examples are shown below:

- Chile to the US, Asia and Europe by sea
- Tasmania to Asia by air
- New Zealand to Asia by air
- British Columbia to Europe by sea

Norway additionally has a history of exporting to the UK but is now focussed on the rising demand of the home market.

The next chapter explores how some of those countries have overcome the challenges explained earlier in this study.

8. CASE STUDIES OF OVERCOMING THE CHERRY CHALLENGES

During this Scholarship I have visited all the main late season cherry production areas (see Table 1 on page 3), as well as some "earlier" areas that are either producing for the main season or are pioneering later production. Many challenges of relevance have been overcome in these regions, especially the late season regions.

8.1 Austral Cherries – Chile Chico, Patagonia, Chile

Challenge of relevance: terrain and climate, extending season by geographic location

This is possibly the southernmost cherry farm in the world, producing late season cherries for sea-freight export to China, in rugged terrain with harsh weather conditions. Rain does not often occur during harvest, but the site is extremely exposed to winds and as a result has very intensive shelter belts per twelve rows and shelter nets every third row.

It was the first significant cherry farm of the tour, and a key learning point was the canopy architecture of a tree system which is the technical way of describing the tree shape and structure being sought for the orchard. Clear explanations were given and discussions had on the components of yield shown in figure 8 below.

FIGURE 8 – KEY COMPONENTS FOR ESTIMATING YIELD CAPACITY OF THE ORCHARD

Number of branches of fruiting age per tree

X

Kilo's per branch (based on length of fruiting area)

X

Trees per unit area

=

Target yield for the plantation

It should be noted that the target yield is not necessarily the maximum achievable yield, as the target takes into consideration the potential fruit size – if too high a yield is aimed for or attained, it will very likely be at the expense of fruit size which costs extra money per kilo to pick and is worth less per kilo at market. For this reason, the above equation can frequently be used back-to-front by starting with

the target yield and using that to determine whether there are more branches than necessary during pruning.

The system seemed well explained, and was the beginning of my learning journey on tree fruit.

FIGURE 9 – CHERRIES IN RUGGED TERRAIN, PATAGONIA

8.2 Reid Fruits – Tasmania, Australia

Challenge of relevance: covering systems/extending season by geographic location

This is a business that has developed into cherries from an inherent expertise in top fruit. The company has developed extremely good marketing and quality to gain maximum reward from the luxury end of the demand in Asia. Fruit is airfreighted in luxury boxes to reach China and other countries fresh around lunar New Year.

The company has moved out of traditional production zones in Tasmania – already the latest and cleanest production region in Australia owing to its island climate - and has moved into traditional sheep/grassland areas of high altitude to delay the seasonality further. These areas face challenges of needing covering systems that will withstand the exposed location of those sites whilst giving maximum delay to the crop ripening.

The company is pioneering the use of the Cravo system *(www.cravo.com/),* a Canadian system that is being developed globally in high-value horticultural products. The system is designed to provide a quick response to changeable weather conditions. Unlike a tunnel that can only be vented to a point once covered, and can only be really truly removed at the end of the season, this system allows folding and unfolding of the covering system in a very short timeframe of minutes, using a motorised

automated control system. Thus the covering is only on the crop during the time of immediate weather threat and does not have the drawback of being a superfluous heat-retainer the rest of the time.

The Cravo system is extremely expensive relative to other traditional fruit covering systems and appears to be more of a lower-priced or more flexible alternative to a glasshouse, rather than something that most fruit growers could justify as an alternative to tunnel production in terms of the added reward from season extension. That said, in countries with hot summers and limited rainfall where late season is being targeted, this system has significant advantages in that it only retains heat when it is additionally being used at times to protect the crop from a rain, wind or hail threat. As one of the last countries to come to market in the Southern Hemisphere the advantage of being later is still significant, especially when the product comes to market at a time when the alternative is sea-freighted produce that might be 5 weeks old from other regions.

FIGURE 10 – SETTING OUT NEW CHERRY PLANTATION, TASMANIA

8.3 Central Otago, New Zealand

Challenge of relevance: pruning and training systems for low-growing

Earnscy Weaver has a long career in advising growers in new production methods and is helping a number of growers in Cromwell to pioneer the low-growing Upright-Fruiting-Offshoot system (UFO). This system has been researched and developed by a small band of the research pioneers I later visited in the USA. The system enables a simpler tree structure and may help in overcoming many of the challenges in understanding pruning in regions where cherries are a fledgling industry.

See pictures on next page (Figures 11 and 12) showing the system used in New Zealand.

In Cromwell the system is being developed for two key reasons. Firstly to offset some of the extreme challenges faced by far flung corners of the world in finding a ready supply of harvest labour, and

secondly to help manage the dominance of the Colt rootstock. New Zealand has a significant challenge not only in terms of labour costs, but also in terms of plant health requirements affecting importation of propagation material as well as challenges in producing this material. This means that whilst growers would like the option to produce more compact plants on Gisella rootstocks common in the rest of the world around, they are very much confined to the more vigorous Colt rootstock for now.

FIGURE 11 – UPRIGHT FRUITING OFFSHOOT SYSTEM, NEW ZEALAND

Overleaf please see picture of the "UFO" system in New Zealand.

FIGURE 12 – "UFO" SYSTEM, NEW ZEALAND

Plant & Food Research, in Clyde, NZ, have a long history of developing new varieties of summer fruit as well as pioneering orchard research and demonstration into canopy architecture.

Their Future Orchards Planting Systems research is looking at the next stage of development of upright fruiting stone fruit trees, and how to optimise the density to produce more trees per hectare whilst maximising light interception. One such means of achieving this is by taking the UFO concept above and then spreading every second branch into a diagonal plane taking it that bit further away from its direct neighbouring branch, making a Y appearance as you look along the rows of trees.

Overleaf please see picture of their "Y-UFO" system

FIGURE 13 – FUTURE ORCHARD PLANTING SYSTEMS TRIAL "Y-UFO" SYSTEM

8.4 Summerland Research – British Columbia, Canada

Challenge of relevance: controlled atmosphere storage, late season varieties

Peter Toivonen has produced some internationally renowned research results on what makes the perfect storage scenario. He believes it's very realistic to keep cherries in perfect condition for 4-5 weeks, whereas back home growers commonly talk about the storage limitation being only 2-3 weeks.

It is fair to point out, as a starting point in this matter, that the Chilean industry relies on sea-freighting to Asian markets over a 5-week travel time, with probably less control than can be exerted in purpose-built facilities, and often with long distances before the fruit even reaches the controlled environment of the container. Peter points out that it's a matter of preserving the acid level in the fruit. The acid is responsible for maximising the life of the picked fruit. This requires attention to picking at the right stage, cooling promptly, and keeping the fruit consistently cool thereafter. This is often "nearly" achieved but with compromises that have significant negative effects.

Picking the fruit at the right time also matters. Picking moderately under-ripe has been an all-too-easy mistake for soft-fruit growers, familiar with deterioration in strawberries or raspberries, to make. In bush and tree fruit it's more important that the acid level has had time to reach its peak, so while the fruit is ripening not only does the sugar level increase but so does the acid.

The taste and quality at the end of storage is affected not by the 5 weeks in store so much as what happens to the fruit in the first critical few hours. Cooling the fruit rapidly and using the right methods then minimises the acid degradation that would result from prolonged respiration of the ripe fruit post-picking. Cooling essentially reduces the respiration rate dramatically and so the more rapidly this takes place, the more of the precious acid and sugar is left in the cherry to see it through the storage period. Not only is this critical for storage but essential in ensuring that the product five weeks later still tastes good.

The key difference between cooling cherries and other fruit is that the stone in the middle can act as a "reactor core" - in Peter's words - so that conventional air-only chilling has very little chance of cooling the stone, just the flesh. If the stone isn't equally well cooled, and then the fruit is placed into the sealed environment (or controlled atmosphere bag), there is even less chance of successfully cooling the stone. The stone then serves to re-build the heat in the flesh and cause the cherry to break down from the centre. Imperfect pre-cooling and heat pockets within the pallet of stored fruit may mean that fruit in parts of the pallet may increase in respiration rate once in the palletised stack. This means that the optimum is to build the pallet with a passive chimney stack or hollow centre so that a heat-engine is generated. In effect this allows any hotspots within the pallet to dissipate their heat by allowing it to rise up the central hollow stack of the pallet, passively drawing the remaining cold air through the layers that had started to heat up and balancing the temperature profile.

Just down the road from Summerland Research, the commercial arm of the institute (Summerland Varieties) exists to develop the markets for the varieties developed at the station. Globally renowned in the breeding of apples, cherries and cane fruit, Summerland is the origin of many of the major late-season cherry varieties found in plantations on every continent of my travels.

8.5 Norsk Landbruksradgiving, Telemark and Ullensvang, Norway

Challenge of relevance: pruning and nutrition expertise, covering systems

Jop Westplate explains that the system of pruning and training can be really simple once the growers have had it explained to them, but that there is a range of level of adherence by the growers. I found during this visit that there were growers of all age ranges willing to listen to and adhere to the advice and to interact with the advisory service and invest in new plantations. There is no barrier to following a tried and tested system, and Jop brings his experience from The Netherlands to a much colder and wetter climate.

The need for this advice exists due to a renewed growth in cherry demand and production on farms that have specialised in top fruit. The growth is targeted at the home market, after a period of contraction where exports to the UK and beyond ended due to competition from sea-freight from North America. The home market in Norway is expanding as a result of this being a luxury product targeted as a treat during school summer holidays, and almost every farm had a roadside stall as well as dealing with the major fruit marketing companies in the region.

This was a defining moment in the trip, as it was possible to see covering methods that growers in the Northern UK might have been sceptical of in terms of resistance to wind in exposed locations.

Seeing both the high Haygrove 8 metre-wide tunnels on 1.4 metre legs comfortably containing two rows of good "controlled size" cherry trees, as well as the Voen woven covering system, clinging to the exposed edges of the Fjords where wind speeds can reach 70 miles per hour, was an extreme confidence builder in terms of what advice can be brought back home.

See http://www.haygrove.com/en/growing-systems

http://www.voen.de/en.html

FIGURE 14 – HIGH "HAYGROVE" TUNNELS IN NORWAY

See another view of High "Haygrove" tunnels in Norway on next page.

FIGURE 14A – ANOTHER VIEW OF HIGH "HAYGROVE" TUNNELS IN NORWAY

See pictures of "Voen" Tunnels on next page

FIGURE 15 – "VOEN" COVERING SYSTEM IN NORWAY

FIGURE 15A – ALTERNATIVE VIEW OF "VOEN" COVERING SYSTEM IN NORWAY

9. DISCUSSION: WHAT WE SHOULD BE DOING TO OVERCOME THE CHALLENGES

In the last three sections I have explained what sort of challenges may affect production of late season cherries back in the UK, and the ways in which other countries have overcome them. This section discusses practical ways of utilising these ideas back home, and how they might be applied.

9.1 Storage and handling processes

We can make use of blueberry storage facilities with controlled atmosphere in key blueberry growing regions (such as Scotland) to store cherries. In most other regions suitable for cherry production, controlled atmosphere facilities for top fruit probably exist, which could be used for cherries. Where facilities are not readily available, a coldstore capable of being run consistently at around 0–0.5 degrees Celsius would suffice. The equipment needed to provide the sealed controlled atmosphere around the pallets is not significantly costly relative to the plantation's output. A compromise low cost alternative would also be passive modified atmosphere bags placed as liners within the fruit tray and sealed when the tray has cooled down, or passive modified atmosphere storage bins.

What could be a barrier is provision of hydro-cooling facilities. These are not as widely available, and are expensive pieces of equipment. That said, all the process really requires is a ready supply of very cold water and a means of sanitising this water and of holding and draining the fruit. This potential barrier can be overcome, and with critical mass it may prove feasible to hire a portable setup.

Last and not least in the handling process, optical sorting technology is important to maximise possible outcomes in terms of a) sizing and b) softness/split sorting. For sizing, being able to split the size grades means maximising possible returns from each size banding according to its most suited target market (low grade, standard retail, premium retail and so on). Being confident that progressive issues not visible on the packing line can be "seen" by optical or softness sorting devices would mean gaining maximum benefit from storage. Manual sorting on the other hand would mean storing for a shorter time frame as progressive issues can less easily be dealt with. I have established in this study that equipment capable of sorting blueberries is not suitable for doing the same job in cherries for a number of practical reasons. As a barrier to entry, optical sorting is not a key issue but it would ultimately be needed as critical mass builds.

9.2 Varieties

The availability of late season varieties and their performance in a particular region of the world is not necessarily the key barrier to putting cherries on to the late market. I believe if all other factors are considered and storage optimised, then success can be attained with a slightly earlier but more suitable (or more readily available) variety stored for longer. The only threats associated with this approach are whether or not the earlier growing regions can go for the ultra-late varieties and grow them well enough to put downward pressure on the late-season price. This may be an opportunity for those regions.

9.3 Covering systems

Covering systems are essential in our climate. It is not possible in my opinion to produce in late-season climates without coverings. There is a significant risk (a) at flowering (frost) and (b) wind damage to the fruit and (c) hail or rain events causing damage or splitting to the entire crop. Additionally, an existing covering system will provide an easy way of adding on a closed netting system where *Drosophila Suzukii* poses a risk. Finding a system robust enough and cost-comparable to existing berry covering systems is additionally not a barrier. In fact both the High Haygrove and the Voen system stand up very well and the latter has been proven in 70mph gusts – enough to cause damage on many systems. The latter vents more freely, but tunnel plastic is being developed with central ventilation strips. Additionally, tunnel plastics with different heat or light retention properties are currently available and these could be used to suit the objective of the grower in delaying the crop.

A final key factor involves minimising the amount of time the crop spends under the covering. In Norway some of the Voen coverings were only really in use for a few weeks around harvest, thus maximising the delay effect of a completely uncovered crop. Canker risk and frost risk at flowering would be key reasons why this may not suit everyone, and why coverings would be put on as early as possible.

9.4 Plantation layout and pruning techniques

Keeping it simple is the key in my opinion. There are many ways to lay out and train and prune an orchard; the response of the trees varies greatly depending on rootstock and variety, and they are not the same as top-fruit in terms of requirements. Every expert or experienced producer has their own take on this, and as a result confusion very quickly occurs. Every tree needs a thought process, as they have all grown slightly differently, and therefore even explaining to a small team of workers what you expect of them is not straightforward; not least if you yourself are already confused from all the advice and ideas available and have a range of varieties that may all need slightly different action.

9.4.1 Tree canopy architecture matters from the beginning

Being able to start an orchard with a vision of what style of tree is required is of key importance. With that vision in mind, sticking to it is then vital. Changing either the ideas or style of production or setting up the tree incorrectly in its early years has proved to cause a significant delay in reaching peak fruiting in some new orchards. In others, not paying enough attention can quickly lead to overcropping and then a substantial drop in the tree's potential after a short sharp peak a few years later. Although there is no such thing as pruning-by-numbers, the early stages are more formulaic and if those steps are carried out correctly the management of the mature tree becomes relatively easier.

9.4.2 Tried and Tested versus "alternative" systems

Lots of growers I met trusted a simple main leader system on which layers of branches are aimed for at three or four suitable points on the leader, and laterals being allowed to come off those where relevant and suitable. Tipping the tree when it reaches the desired height, or earlier if responses are

required lower down the tree, seems to give suitable results. The tree will continue to send out top growth when tipped and so the wrong rootstock in the wrong covering structure may still end up in a battle against top vigour. Allowing branches to be level or slightly down for a self-sterile, and a bowl-shape upwards for a self-fertile, seem to make sense according to the opinions of a number of experts.

Ensuring there is a balance of age by removing dominant branches or old branches in a ratio of 1 or 2 per year once the tree has started to fruit appears to make sense by keeping the tree refreshed with new branches. It appears to make sense to "risk manage" the removal of old branches in some situations by pruning back to a bud or two from the trunk, rather than all the way back. This can give a choice of options if the removal of the branch fails to generate a new branch somewhere else from the trunk, as at least there is the chance of a new sub-branch from the base of the older branch.

However, I particularly liked the low-growing UFO style as it seems easier to explain and to see which branches to cut or leave. Perhaps this is partly because all branches are in a visible plane rather than in a much more three-dimensional layout. However this remains reasonably "new-fangled" as a style, or at least as one which comes round as a trend in orchards round the world but doesn't seem to take over as a dominant style. If existing tunnel structures on a berry farm are to be used, more or less the only way to allow the main leader to reach any kind of height is by turning height into horizontal length. This shows that alternative systems certainly have their place in meeting specific needs.

9.4.3 Rootstocks

Fertile soils with berry tunnels of inadequate height might need a rootstock more dwarfing than the standard Gisella 5 or 6. There might come a time when root pruning should be carried out: if the tree is too top-strong and needs holding back in order to keep productivity lower down and stop the fight to keep the tree within the tunnel. In any case, whichever system a grower chooses, all factors affecting performance must have been considered even before even getting to the first step of establishing the crop. The system should then be adhered to and carefully tended to in the establishment phase, otherwise retrospectively fixing the situation may cost years in terms of reaching peak fruition.

9.4.4 Conclusion: plantation layout and pruning

There are many resources online relating to architecture, layout and pruning of cherry trees; many opinions; and there will never be any shortage of people willing to help with advice, either friendly advice or as a professional service. My own advice on this is get all the help you need, but beware of mixing sources of advice. See a system you like explained to you in an orchard that your adviser has brought to neat fruition in similar conditions to your own and use that as a confidence measure in trusting their advice. That can take away a lot of the fear factor of "*I don't quite feel ready to do this to my trees!*"

10. CHERRY PLANTATION LIFETIME COST ANALYSIS

As part of my investigation of the topic I carried out a lifetime costing and production analysis to compare cherry production with that of blueberries, as blueberries are possibly the most prevalent competitor for production space and investment in the UK fruit industry at the moment. This is an observation I had also made when I was in Chile.

As the blueberry production data belongs to a commercial producer in the UK, it is only possible to present the *conclusions* from this part of the study in the report, rather than the full details of the lifetime costings. This study was separate to my Nuffield Farming Scholarship, and is based on a range of assumptions and experiences. Those wishing to discuss this work further may contact me.

The key outcomes of this work are shown below:

On the downside cherries (relative to blueberries):

- Take longer to establish and pay back (year 7 versus year 5)
- Have 35% lower sales value/acre/year once established
- Are higher risk and have greater production volatility

On the upside cherries (relative to blueberries):

- Have lower initial establishment costs
- Have a pick rate some 4x to 8x more kg's per hour
- Achieve 20% higher gross margin/acre/year once established
- Reach a longer lifespan than blueberries (18 years versus 12 years)
- Resulting in 33% higher gross margin/acre annualised over whole plantation life

It should be noted that this comparison was for soil-grown cherries against potted blueberries in order to compare the industry standard.

11. MARKETPLACE OPPORTUNITIES AND THREATS TO ADAPTING TO LATE SEASON CHERRY PRODUCTION IN THE UK

The previous sections of the report have focussed on production techniques and the associated opportunities and challenges. This section focusses briefly on the threats and opportunities presented by the marketplace.

There is one significant and much underexplored opportunity in the UK marketplace for more durable fruit types such as blueberries or cherries where we may be the last production region on our continent, and that is to focus on opportunities outwith our home market. I found very little attention has thus far been given to developing this area of interest, and it's something that would be of immense relevance if we ever consider the risk of reaching saturation in the domestic market. Being the last region to ripen opens up huge opportunities such as those seen across continents in the Southern Hemisphere. These fruit types transport far better than traditional berry production.

There are also a few threats to consider in terms of potential impact on the domestic market from expanding late cherry production.

One key risk is the development of extra-late season varieties in earlier production regions, which could not satisfactorily reach maturity in more extreme latitudes. This would effectively lead to season overlap, potentially from regions with lower production costs due to other climatic advantages. This threat may come from earlier regions in the domestic market, or from other production regions around the world. I consider the risk of this to be greater from within earlier regions of the domestic market, and present - but lesser - from other late producing nations owing to the long distances from North America to the UK; and also owing to the current domestic focus of the Norwegian production.

Another key risk comes from not being able to maintain continuity of supply. This could happen when the main season volume drops off during the weeks prior to the late season volume increasing, resulting in retailers reducing available shelf space on the cherry product line. This already happens when the market moves from domestic to long-range imports, and would artificially reduce demand at a time when the late season production could be yet to peak.

12. OBSERVATIONS FOR THE WIDER INDUSTRY

During my travels there were numerous visits aside from or around the more focussed study topic, and those were wide, ranging from high-tech salmon farming to regional produce branding and a number of conferences. These were a great opportunity to keep an industry-wide context to my overall learnings.

12.1 Regional agriculture and farm produce branding

A visit to the Southern Forests Food Council in Manjimup (WA) showed me great work that is taking place to give a name to this region of Western Australia in terms of being a food basket and an agri-tourism destination.

Although we have similar organisations back home (e.g. Scotland Food and Drink) I could not help feeling that Southern Forests has really made this connection very earthy and very natural, close to the producer and the food itself. This is reflected in the Southern Forests' website as well - http://southernforestsfood.com/ - which immediately looks and feels consumer-focussed, whereas our equivalent feels very business-focussed.

12.2 Horti/research/government infrastructure

In Tasmania I found it very noticeable how much the country relies on food and drink and tourism, making it rather similar to Scotland. What impressed me there was the level of joined up connection between horticultural/agricultural research institutions, and governmental involvement in encouraging agriculture, and the producers themselves. I left thinking that thus far on my trip this was the strongest example of this level of inter-connection, recognising the inter-dependency. I felt that this is something that we really could aspire to back home. A common theme, observed also in the US and Norway, was the existence of joined up research funding and extension work that fed a continuous cycle of "needs from farm" to "research projects" and to advice and expertise availability, which left me feeling in no doubt as to why:

a) the US has some of the world's most renowned cherry research expertise
b) Tasmania has such a vibrant food brand that carries its produce successfully to markets as far afield as Asia and the US, and
c) Norway manages to have a thriving food industry built around small farms in spite of climatic and topographical adversity.

12.3 Glasshouse production trends

During my attendance at the Canadian Greenhouse Conference in Ontario, it was notable that there is a buzzing large-scale horticultural industry in that region. What was interesting was that the very expensive glasshouse structures are majoring on salad/pepper/tomato and flower production when, that same day, the strawberries on the supermarket shelves were from California.

In the European industry there has been a strong trend of moving the lower-value horticultural commodity sourcing to the hotter climate regions, and converting the expensive climate-controlled glasshouse units into high value horti-production, especially of strawberries. This has the effect of increasing the reward attainable from the glasshouse unit, as well as of ensuring that the least durable and highest value product is the one being produced closest to home. In our own UK model, at that time of year, it would be more likely that the strawberries would have come from close to home and the tomatoes/peppers and so on would have endured the 3-day truck ride. It does appear that there is a significant opportunity for the Ontario glasshouse producers to gravitate to soft fruit production.

12.4. Closed markets – where does the consumer fit in

During my time in New Zealand the extremes of opportunities and threats created by working within a strictly controlled market for fresh produce became noticeable. Unlike the home market there is a strong level of regulation on what can be taken into the country from where and when. At home we are now very much used to buying fresh fruit year round at increasingly consistent quality standards. In terms of fresh produce the closed market status of some countries usually has a lot to do with maintaining a high-health status and avoiding pest transmission, or can be defended in this context, even if that is actually not wholly the case.

Anecdotal discussion on blueberry prices referred to a one-time peak at NZ$ 70/kg which had led a producer somewhere in the country to be purportedly setting up a glasshouse just to produce out-of-season year-round blueberries to capitalise on this price.

It is very interesting to observe that in this situation a closed market could price most consumers out of buying this superfood, which has revolutionised the way in which we at home can consume and snack on fruit. Does this pose the question that allowing consumers to have 365-day access to produce is potentially more important for humankind than allowing markets to protect themselves from competition? Or, in the case of plant health, what measures can be put in place to allow controlled and monitored importation from known clean areas?

The other quirk created by the above situation is that, as frozen blueberries are not seen as a plant-health threat, the consumer can purchase the frozen option year round, which again seems to go against the grain of encouraging fresh produce consumption.

13. CONCLUSIONS

As a result of undertaking my Nuffield Farming Study I would conclude that we can successfully extend the cherry season in the UK by moving production to non-traditional cherry growing regions. To do this we need to:

1. Grow cherries using covering systems designed for cherries: either wide, high tunnels or vented-woven interlocking strip coverings.
2. Where (1) is not possible, cherries can be grown using low growing horizontal leader methods so that tunnel height is not the limiting factor to producing a tree.
3. Greater attention should be paid to the pruning requirements, during tree formation especially, and the system should be decided on from the start.
4. Grow relatively late varieties that work, not necessarily the very latest available.
5. Cool and store well, using established recommended best practice that really can achieve 4- or 5-week store periods.

11. RECOMMENDATIONS

In order to help to push this opportunity forward I feel the industry at large needs to focus on the following thoughts:

- We need to encourage new growers in potential late season regions such as Scotland to move into cherry production. These could be existing berry or arable growers, and it could even be existing main-season producers doing the encouraging.
- We should also capitalise on the regional branding of fresh produce when extending the season and marketing the fruit against more expensive imported fruit.

12. AFTER MY STUDY TOUR – IMPLEMENTATION

A large part of my tour has focussed on comparing the merits of producing late season cherries in regions currently specialising in the soft fruit market. The focus in the costings comparison couldn't be clearer than when comparing cherry establishment to that of blueberries.

My study tour was inspired by the realisation that, at least in Scotland, soft fruit production had been relatively static for a couple of seasons after a long-term growth period. There were many reasons for this but it meant that it was logical to look for other relatively high value, high risk, and high-detail fruit types that could suit the grower with a hunger for expansion, but where there may not be a market expansion opportunity for their soft fruit.

Almost simultaneously with my tour, market opportunities developed at a significant pace for quite a number of the soft fruit growers on the east coast of Scotland and there became a hunger for growth again; expansion in crop types that these growers were already entirely familiar with and set up for.

In some ways this created another land-grab for soft fruit when it would become very difficult to convince any grower to otherwise invest in something completely new. My tour outcomes enable me to advise the existing three fledgling cherry orchards that I already deal with, whereas prior to this study I was unable to do so in any real capacity. Whilst my tour outcomes may not necessarily lead neatly into an expansion plan for diversification with existing berry growers that I deal with, it does pave the way for the future at such time as any one of the three points below occur:

a) The berry market growth starts to slow down.
b) The existing orchards in the north of the UK reach peak fruition and demonstrate the type of reward that growers have planted in hope of.
c) Other growers, perhaps from lower risk production types including arable, decide that cherries are a relatively interesting crop to invest in.

Point b) is of significant importance. It seems clear to me that despite all of the theory, plus the reasoning of the growers who have taken the plunge, and/or my own learnings as identified in this report and as I share them on farm, it is still vital for growers to see that something will actually come of what is already planted.

Point c) is also of crucial importance to expanding the industry. It could be suggested that a lot of the day-to-day attention (other than at pruning and harvest) is significantly less than looking after the hourly water status of a crop of table-top strawberries or the daily harvest routine (every field, every day) of a raspberry season running into several months. As a belated part of this study there may be many ways in which a cherry orchard dovetails more suitably with a successful arable enterprise, on a scale that doesn't swamp the finances, and without significant day-to-day involvement other than at key times. This has to be a significant forward-looking strategy to expand the industry in late season regions. Again, on point c) there is no reason why a push into fresh arable ground shouldn't involve main season producers from the traditional regions moving northwards and making smart business arrangements with those who have the climate and the land. This could also help share the risk, and would involve ground that isn't already in competition from a soft-fruit mindset.

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Jan Redpath
May 2017

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[7] Circa Instans by Mattheaus Platearius

[8] Cherry trees by Robinet Testard, courtesy of www.wikigallery.org

[9] Source: http://fruitworldmedia.com/index.php/featured/sweet-sour-cherry-production-poland-expected-increase

[10] FAOSTAT production tonnes, imports tonnes and export tonnes and 2014 United States Census Bureau See FAOSTAT http://www.fao.org/faostat/en/#home

[11] FAOSTAT production tonnes, imports tonnes and export tonnes and (UK mid 2015 population data) See FAOSTAT http://www.fao.org/faostat/en/#home

[12] Produceview market information, Source: www.produceview.co.uk