

# BLUES, PINKS AND GOLDEN WONDERS!

## *A Brief History of the potato with a local flavour!*

BY ROY COPELAND

I started gathering potatoes when about seven, behind the Fergie driven by my father and the spinner with the bag hung on its side to stop the potatoes being flung far and wide. Blues in the morning when the light was good, whites at the end of the day. An apprentice at first, gathering with somebody strong enough to kick the soil and find buried ones, and big enough to empty the basket into a bag. Wicker baskets when I started, then galvanised metal. Of course in time I grew big enough to kick the soil and fill the bags myself, but never improved enough to escape my father's wrath when he saw spuds I'd missed, or my bag fell over. Fortunately he quit potatoes after a few years and my potato experience never reached dropping seed down a bell planter, or gathering into ton boxes.

Many of you will have the same memories, the oldest will also remember storing potatoes over winter in bings: hollows dug into the soil, potatoes heaped up, covered with rushes for insulation and waterproofing, then soil to



*Preparing the Bing*

gathering potatoes each autumn to raise pocket money. Older readers will appreciate that since WW2 far fewer farmers have been growing potatoes and are no longer using schoolkids to gather the crop behind a spinner. But what of the history of potatoes in Ireland pre- and post-famine? A tale of rise and fall.



*Bagging Potatoes*

finish off, later the finger-numbing procedure of grading-out of the bings on cold winter days.

To most people in Ireland a history of potatoes will evoke images linked to the famine in 1845-7; starving people, famine graveyards, the remnants of lazy-beds that can still be seen on mountainsides. Many will recall

Potatoes are native to the mountainous Andean region of South America. Species of *Solanum* have been cultivated there for at least 9000 years. Spanish conquistadors were the first Europeans to see their production by Incas in the region of present-day Peru/Bolivia and were intrigued enough to bring home potato tubers, probably first in the 1560s. Initially cultivated in the Canary Islands and Spain their value as food must have been recognised quickly, because records show that the Hospital de la Sangre in Seville was buying potatoes as part of their housekeeping as early as 1573.

From Spain potatoes were distributed across Europe before 1600, possibly through a network of exotic plant collectors, such as Carolus Clusius in Vienna, who received two tubers from the Prefect of Mons, Belgium. Initially they were likely to be only a botanical curiosity, because in S. America potatoes are adapted to tuberise in short days. The longer summer day length in northern Europe would have inhibited tuber formation in S American potato plants. Some years of selection

would be needed to get plants that would form tubers readily in midsummer rather than late autumn.

How the potato came to be introduced into Ireland is not precisely known. Popular belief that Sir Walter Raleigh brought potatoes from Virginia, USA to his estate near Youghal, Co. Cork is a myth. They arrived by other some means, most likely as early as 1600. Certainly by 1650 potatoes were an established crop in the Cork area and from there their cultivation spread across Ireland.

Before potatoes, cereals were the only staple food crop across Europe and food scarcity was very common; wet harvests produced mouldy grain and dry summers reduced yields. Potatoes added a crop that complemented cereals. They needed more rain than cereals for maximum yield; could produce more starch/acre than cereals; yielded best in acidic soils, which predominate in wetter climates; and were not spoiled by wet harvest weather. No wonder the potato was adopted readily in Ireland, whereas elsewhere it did not become an accepted part of agriculture until mid-eighteenth century.

Initially it was used as a supplementary vegetable by all social groups. In the poorest section of society however, it gradually replaced other foodstuffs and together with skimmed milk or buttermilk became the main component of daily diet. Its popularity was such that 10 – 12 lbs. per day came to be the average consumption for an adult male and by 1845 two and a half million acres, were tilled for potatoes.

Although the potato greatly improved food supply across Europe it did not eliminate scarcity and ultimately that led to the introduction of blight from the Americas. Through the 1700s and early 1800s the problems of 'curl' and 'taint' became more common across western-Europe. Curl was the virus disease now called leaf roll, which is spread by aphids. It has never been a serious problem in Ireland. Taint, now called dry rot, is a fungal disease that rots potato tubers during overwinter storage. Disease outbreaks and bad weather created mini-famines in some years. Document searches done after 1850 found references to 24 potato failures of varying severity in Ireland since the 1720s. For example, 1739 & 40, "entirely destroyed"; 1770, "largely failed"; 1800, "general failure": 1821 & 22, "complete failure in Munster & Connaught; 1835, "failure in Ulster".

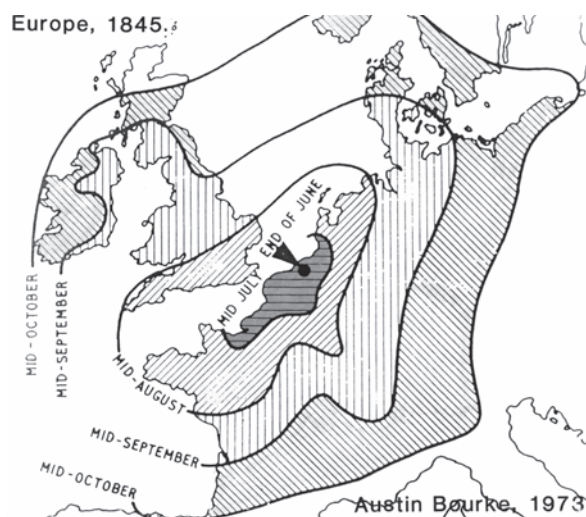
On the continent a similar state of disease outbreaks causing food scarcity led the government of Flanders, in 1843, to support an expedition to north America to search for potatoes resistant to curl and taint. Unfortunately, around 1840 the fungus that causes blight (later called *Phytophthora infestans*) had spread from its natural base in the Toluca Valley, Mexico to the north-

eastern seaboard of America and was well established by 1843. The potatoes brought back to Flanders by the expedition probably contained blighted tubers which would have caused some disease in the crop grown from them in 1844. But it was in the more favourable wet summer of 1845 that blight became an epidemic that swept from the continent into England and across to Ireland.

The famine story is well documented and I won't detail it, except to mention that in August 1845, when the scale of devastation in Belgium was realised, merchants sought to import potatoes from Ireland, but before consignments left Ireland blight had established and by the time they arrived in Belgium the potatoes were rotten. That stopped an export trade that had become important. The earliest reference to this trade is of exports to military garrisons in Gibraltar and Port Mahon, Balearic Islands, in 1730. But by 1840s it would have been principally to Britain, which was then getting 70% of its food imports from Ireland. It's been calculated that by 1845 annual exports were around 250,000 tons. Possibly half came from Ulster. A report in 1846 stated Ulster was the main area for export production and ships' captains suggested at least one hundred thousand tons of potatoes were normally shipped annually from northern ports to Scotland.

### Potatoes, post-famine

The potato acreage fell to a much-reduced 248,000 acres in 1847, increased to 700,000 acres in 1850, peaked at 1.2 million acres in the 1860s and output thereafter declined slowly, responding to emigration of people and improvements in yield.



*The spread of blight across Europe 1845.*

Naturally the famine sparked a desire to find or breed potatoes resistant to *Phytophthora infestans*. Believing that such material would be found in its natural home

European scientists brought more potatoes from South America. Sometime in the 1860-70s that resulted in the importation of wart disease (*Synchytrium endobioticum*), which profoundly affected the production of potatoes.

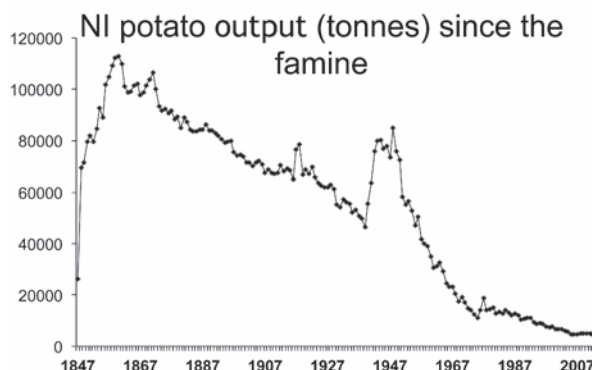


Figure 1. Trend in potato production in Ulster since famine time.

Being a fungal disease adapted to cool wet climates its effect was greatest in the wetter parts of Europe. First reported in Ireland in 1908 the disease peaked around World War I. While many of the common varieties in Ireland, e.g. King Edward, British Queen, Up-to-date were susceptible it was soon realised the some newer ones, e.g. Kerr's Pink, Arran Victory, Golden Wonder were immune to infection and the disease could be controlled by statutory controls; 'scheduling' townlands where wart had occurred. Only immune varieties could be grown there and no potatoes intended for replanting could be moved outside scheduled areas.

Officials began to inspect crops in scheduled areas, which were largely in the Kilkeel-Downpatrick area of south-Down, an area north-west of Lough Neagh and parts of the Glens of Antrim, to ensure that only immune varieties were being grown and that each crop was 'pure', i.e. free of plants of other varieties. They offered to provide the grower with a certificate if more than 97% of plants were of the intended variety. Purity inspections proved popular because the certificate issued was a statement of quality that had commercial value to the farmer. Thus the 120



Historic horse-drawn potato sprayer.

acres inspected in 1922 rose to 6467 acres in 1928. As a consequence of wart, potato crops are now of single varieties. Beforehand they would have been an admixture of plants, maybe with one variety predominating, e.g., The Cup, Lumper and normally given a local colloquial name, a practice that continues still, as adverts for 'Dublin Queens', 'Wexford Queens' etc. testify.

Purity inspections led also to the inception of seed potato production being separate from production for human consumption (ware) and the start of an official Seed Potato Certification Scheme sometime in the 1930s. Exactly when isn't known because the Ministry of Agriculture produced no annual report between 1934 and 1950.

WW2 again boosted potato production, with the scale of potato production in Ulster being a boon to Britain. Farming was controlled by the Ministry of Food, which fixed prices of produce but in return guaranteed to buy all the output. That lasted until 1954. A good summer in 1940 produced a bumper crop and Government was forced to introduce the stock-feed scheme that dyed stocks surplus to human needs and paid growers a subsidy to use the potatoes for animal feed, a scheme that lasted till the 1980s. Twelve potato starch factories were built to dehydrate surplus potatoes. Before the final two closed in 1968 40,000 tons of starch had been produced of which only 12,000 tons was used for human food.

### Exports

As earlier mentioned, Ireland had built an export trade in potatoes well before famine times, with Ulster seemingly being the main province for export production. Although accurate data are unobtainable exports clearly resumed in the years after the famine and by 1900 had attained their earlier volume.

World War I boosted exports and they remained above 100,000 tons through to WW2. At war's end the substantial export trade to Europe and Africa in both seed and ware potatoes was resumed. Potatoes were sent to all countries around the Mediterranean and some further afield, e.g. Angola, South Africa, Argentina.

This was a golden era of seed potato production in Ulster, when it and Holland were the largest producers in western Europe. Varieties such as Arran Banner, Up-to-date, King Edward were exported from October to December, planted in countries such as Cyprus and Egypt to be harvested in March-May and the output re-exported back to Britain & Ireland to fill the gap between the end of overwintered main-crop and the arrival of earlies in June. It peaked in the 1960s when 100,000 tons was exported. Since then it has progressively declined to around 2-3000 tonnes now.

**Table 1. Annual exports of potatoes (tons)**

	All-Ireland	Northern Ireland
1904-08	107,435	
1909-1914	143,607	
1914-18	213,688	
1919	301,271	
1920	283,260	
1921	184,826	175,283
1922		262,991
1923		113,349
1924		141,069
1925		142,173
1926		168,405
1937-39		176,460

(1922, First Annual Report of the Northern Ireland Ministry of Agriculture)

### Why the decline?

Naturally a multitude of factors contributed but the greatest has probably been lack of new varieties.



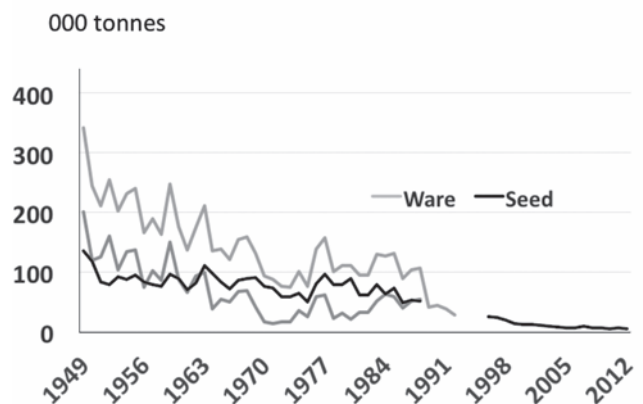
**Loading potatoes for export**

Plant-breeders' rights protection, introduced in the sixties, gave the equivalent of patent rights to varieties. Effectively it allowed the owner of a new variety to have monopoly rights to its supply and be able to charge a profitable premium for seed tubers. Northern Ireland had no commercially valuable new varieties, whereas in the sixties the Dutch released Spunta which grew more attractive tubers and yielded much better than Arran Banner or Up-to-date. A succession of new varieties has followed from Holland, which has a huge breeding industry, but Northern Ireland hasn't yet produced a winner abroad. The 'free' varieties that are available for NI producers to grow can be produced in every country. Thus they are more an opportunistic trade sold at rock-bottom prices that leaves minimal profit and no funds for growers and merchants to invest in better facilities.

The Dutch have also outstripped Northern Ireland in customer relations. Growers in Ireland have a long tradition of shortchanging customers. The Ministry of Agriculture's Annual Report, 1927 states '*our potato export trade is being seriously injured, complaints are being received about grading, dressing and branding*'. The legislation that required licensing of merchants and dockside inspections was introduced because of complaints about '*bad quality and short weight*'. Regrettably some growers continued to have a pride in getting bad quality past the inspector. Not only has that attitude eroded customer trust in our quality to the extent it's reported that in 2014 a consignment of sound seed potatoes was rejected abroad simply because the branding on bags stated they came from Northern Ireland. Our untrustworthy reputation has also stopped Dutch merchants licensing production of their varieties here.

Ironically the NI export potato trade has needed good customer relations more than Holland because our production has always suffered from excess rainfall. From June to August Northern Ireland has 25% fewer sunshine hours than eastern-England or Holland due to more cloud and rainfall. That is a double-whammy, because it boosts infection by blight and bacterial rots, whilst reducing the innate disease resistance of tubers. Following the summer of 1987, which was wet, blight rotted about 7-10% of a thousand ton consignment of King Edward in Egypt after the tubers were planted. There have been far too many other instances of rots in consignments, albeit on a smaller scale.

Hence exports have declined steadily to a few thousand tonnes sent now to only 3-4 destinations, whereas it was once to over twenty countries. The trend applies to the whole island of Ireland. Once it would have been the biggest potato exporter in Europe. Now it is a net importer, because the tonnage imported as frozen chips, or to make fresh chips exceeds all exports. What a comedown!



**Figure 2. Potato exports from Northern Ireland post-WW2.**