

Potato History

by Emma Maxwell

The potato that was first domesticated in the Andes, (the region of modern-day southern Peru and extreme north western Bolivia) between 8000 and 5000 BC (Spooner et al., 2005) has come a long way. Following centuries of selective breeding there are now over a thousand different types of cultivated potato, all originating from the genes of just two wild ancestors from the *Solanum brevicaulle* complex (Office of International Affairs.1989; Spooner, 2007). Today's cultivated varieties only contain a small representation of genetic diversity that could be found in the four recognised species with 5000 potato varieties still grown in the Andes, a massive gene pool that is yet to be tapped (United Nations Food and Agricultural Organisation. 2009).

Potatoes have had a challenging history since their introduction to Europe at the end of the 16th century. First arriving in Spain and then gifted around Europe they were appreciated for their flowers, but were regarded only fit for pigs to eat and many believed them to be poisonous. The first to appreciate them as food were the sailors and that is how they were successfully spread around the world. In France during the 18th Century Marie Antoinette who particularly liked the flowers wore them in her hair and Louis XVI in his buttonhole this act helped to popularised the potato. At this time much of Europe was suffering from famine and potatoes were seen as security against cereal crop failure. The potato became the first modern convenience food; energy rich, nutritious, cheap to purchase, ready to cook without processing and easy to grow on a small plot, allowing urban workers to cultivate them in small back yards. Potatoes soon were the staple food of Europe and the United States leading to population growth and reduced diseases such as scurvy and measles. Potatoes have been credited with fueling the Industrial Revolution (Kiple & Ornelas, 2014). Yet the reliance on this staple food was the down coming of Ireland when potato blight affected crops in 1845-1849 at a time when 80% of their calorific intake came from potatoes; potatoes that came from a slim gene pool due to the very limited number of varieties initially introduced. In 19th Century a movement called the Society for the Prevention of

Unwholesome Diet was keen to keep them out of Britain, but the potato was here to stay. Today potatoes are the 4th most important crop worldwide following wheat, rice and corn (Pliska, 2008). They are produced in over 100 countries worldwide and global production exceeding 300 million tons each year. More than half of global potato production now comes from developing countries (International potato centre, 2014).

The potato is an important food crop giving a comparably high yield of nutrients per cultivated area; potatoes can yield two to four times the food quantity of grain crops, a quality that is particularly welcome in regions where land is scarce and with a growing world population (Pliska, 2008). Potatoes produce more food per unit of water than any other major crop and are up to 7 times more efficient in using water than cereals (International potato centre, 2014), which could be very important quality with future climate unpredictability causing water shortages around the globe. They are high in carbohydrates, protein and fibre and are rich in micro-nutrients; containing high levels of potassium, vitamin C and a good source of B vitamins and minerals such as phosphorus and magnesium (United Nations Food and Agricultural Organisation, 2009).

World potato output has been on the rise for the last ten years. Potato output has even surpassed that of other staple food crops in developing countries, particularly in Asia, with China becoming the world's largest potato producer (Current concerns. 2008). Potato consumption in developing countries jumped from 10 to nearly 22 kg per capita between the early 1960s and 2003. Yet the UK staple carbohydrate for many meals now consisting of rice or wheat, with a growing interest in quinoa among other grains as a staple, yet all of these have social and environmental impacts in the country of origin. Wheat production is often on such a massive scale that reduces biodiversity and carries risk of crop failure and loss of land due to drought and floods. Rice, quinoa and other popularised grains are taking subsistence food from the hands of the people growing it and the mouths that need it, pushing up the prices in the developing world as the western demand rises (Blythman, 2013). Potatoes are a crop that grows well in Europe and particularly in Britain with a cool damp climate; the one main challenge is blight (*Phytophthora*).

References

- Blythman, J. 2013. 'Can vegans stomach the unpalatable truth about quinoa?' Available online at: <http://www.theguardian.com/commentisfree/2013/jan/16/vegans-stomach-unpalatable-truth-quinoa> Accessed Nov 2015
- Current Concerns. 2008 'Freedom from hunger thanks to potatoes'. No 11, Source: Swiss Agency for Development and Cooperation (SDC) Available online at: <http://www.currentconcerns.ch/index.php?id=650> Accessed 2013
- International potato centre. 2014. Agricultural research for development. Available at: <http://cipotato.org/potato/facts/> Accessed 2014
- Kiple and Ornelas. 2014. 'The Cambridge world history of potatoes.' Available at: <http://www.cambridge.org/us/books/kiple/potatoes.htm> Accessed 2014
- Office of International Affairs. 1989. 'Lost Crops of the Incas: Little-Known Plants of the Andes with Promise for Worldwide Cultivation.' nap.edu. p. 92. ISBN 030904264X. Available online at: http://www.nap.edu/openbook.php?record_id=1398&page=91 Accessed 2013
- Pliska.T. 2008. 'Potatoes and climate change.' Info Resources Focus. no. 1/08. Available online at: http://www.sdc.admin.ch/en/Home/Documentation/Advanced_Search?action=search Accessed 2015
- Spooner, D.M.; et al. 2005. 'A single domestication for potato based on multilocus amplified fragment length polymorphism genotyping.' PNAS 102 (41): 14694–99. Available online at: <http://www.pnas.org/content/102/41/14694> Accessed April 2014
- United Nations Food and Agricultural Organisation. 2009. 'The potato' (PDF). International Year of the Potato 2008. Available online at: <ftp://ftp.fao.org/docrep/fao/011/i0500e/i0500e02.pdf> Accessed 2014