

## Plant Lovers Almanac

For: March 22, 2014

Jim Chatfield

Ohio State University Extension

St Patrick's Day is past, and this year maybe it is yet a bit early for planting peas and potatoes, but spring is here. Some ground is still frozen and garden soil still too wet, but despite ice that lingered all the way into early this week, spring is arising with the sap from last year's maple tree photosynthetic production. We shall begin to see over the next two months whether winter wrought havoc on our perennial plants, but hopefully most will be well. Southern magnolias, surviving well this far north over the past decade in northeast Ohio, have certainly bronzed up and these desiccated leaves may not survive, but checking stems in the past few weeks, it appears that there is an amply putting on, or keeping on, of the green.

Before moving past St. Patrick's Day, and speaking of the Irish, let us consider - the role of the potato in history. This South American native plant (*Solanum tuberosum*) is truly a key player in Western civilization. Brought back from Peru and the New World to Europe in the late 1500s, potatoes transformed farming and cuisines. Consider cuisine alone: can we imagine Italian cuisine without tomatoes and its South American cousins, namely tomatoes, eggplants, and bell peppers?

As to farming, potatoes are relatively easy for one family to grow and to provide almost all needed nutrition, with their high level of carbohydrates, the protein they provide, and many minerals and vitamins, including vitamin C. Potatoes are also easy to store, and many argue that potatoes arrival in Europe revolutionized warfare. Prior to potatoes, an army could take control of a region by securing the stored grain facilities. With potatoes, every farmer could survive, making sieges somewhat obsolete.

So, much of Europe and the British Isles, including Ireland, really took to potatoes. Too much as it turned out. The Irish tenant farmer economy, British economic and social policies, a less than modern understanding of social needs and of nutrition, and a fungus-like organism named *Phytophthora infestans* conspired to spell disaster for Ireland.

Up to 1/3 of the Irish people depended to a great extent on potatoes, eating up to 8-14 pounds per day during some months. With unusually cool, wet weather, the use of potatoes with limited genetic diversity, notably the Irish Lumper variety, and lack of understanding of the germ theory of disease (not to come for several more decades), the mid-1840s ushered in a disastrous outbreak of the potato late blight disease caused by *Phytophthora infestans*.

*Phytophthora infestans* arrived later than the potatoes from Peru in the 1500s, probably from Mexico on ships in the early 1840s, after some years of epidemics in North America and the United States. It met its perfect storm in Ireland with its dependence on potatoes and the faulty economic system, and from 1845-1851 it is estimated that over a million Irish died from starvation and millions migrated abroad and to England and Europe, including large numbers to the United States and Canada. Between the 1840s to 1911, the population of Ireland fell from about 9 million souls to 4.4 million.

Eventually, we came to understand that invisible plant pathogens like fungi can cause infectious plant diseases, rather than the "mortiferous vapours" and "blind volcanoes in the center of the earth" that were postulated in the

1840s. We learned about the potato late blight disease cycle and that *Phytophthora infestans* spread from potato foliage to tubers, killing all, and then survived overwinter on rotted potatoes in the field – so, no more cull piles left at the edge of the field. We learned that copper compounds and other chemicals were effective pesticides to prevent *Phytophthora* from penetrating the leaves with subsequent spore bodies making their invisible way to enlarged potato stems (the tubers we eat). We learned that we should have more genetic diversity among potato varieties and we learned, with some difficulty to breed potatoes with some resistance to the *Phytophthora infestans*.

Yet, this was not the end of the matter. *Phytophthora infestans* (“” literally means “plant destroyer”) also infects tomatoes and this century we have had major problems on tomato crops as *Phytophthora infestans* spreads in clouds of spores from one infestation to another via wind. To get an idea of the potential for contagion, each dark lesion on a tomato or potato leaf can produce 100,000 to 300,000 spore structures. Potato growers still need to use chemicals to control this disease. One interesting note from a great website (google: The History Place + Late Blight of Potato) is:

“During the First World War, all of the copper in Germany was used for shell casings and electric wire and therefore none was available for making copper sulfate to spray potatoes. A major late blight outbreak on potato in Germany therefore went untreated, and the resulting scarcity of potatoes led to the deaths of 700,000 German civilians from starvation.”

So, hire more plant pathologists! Plant disease matters. And now, on to Plant Challenges!

**The New Name That Plant Contest.** Our plant this time is a familiar if not native plant. That is all I am going to say, other than that almost everyone enjoys this plant in one form or another. The first to e-mail or text me this Saturday will get a copy of Aldo Leopold’s conservationist classic, *A Sand County Almanac*. E-mail is chatfield.1@osu.edu. Phone is 330-466-0270.

### **The Last Name That Plant Contest**

Following Lois Rose’s medlars in the last February contest, The March 8 contest winner was Lee Goske of Kent who was the first (6:46 Am) of many who identified the mystery plant as larch (*Larix*). There are a number of species of larch including our native tamarack (*Larix laricina*) and others that do well in Ohio, including European larch (*L. decidua*) and Japanese larch (*L. kaempferi*). They truly are lovely conifers for wet sites, as graceful as can be with their glorious light green foliage freshening up the spring, summers of a darker green, autumns of spun-gold fall foliage color, and graceful branch and twig structure in the winter. As to Monty Python, whether you channel your own schooldays angst or connect through schadenfreude for the angst of others, you have to relate to their “The Larch” sketch (check out You Tube). Do you “Just want to go home” after trying out these Name That Plant challenges?

Remember though, though this may not be the first day of March and the vernal equinox has just past, enjoy this spring tonic of a few stanzas from William Wordsworth’s “To My Sister”:

*It is the first mild day of March:  
Each minute sweeter than before  
The redbreast sings from the tall larch  
That stands beside our door.*

*There is a blessing in the air,  
Which seems a sense of joy to yield*

*To the bare trees, and mountains bare,  
And grass in the green field.*

*My sister! ('tis a wish of mine)  
Now that our morning meal is done,  
Make haste, your morning task resign;  
Come forth and feel the sun...*

*Edward will come with you;--and, pray,  
Put on with speed your woodland dress;  
And bring no book: for this one day  
We'll give to idleness.*

*No joyless forms shall regulate  
Our living calendar:  
We from to-day, my Friend, will date  
The opening of the year.*

*Love, now a universal birth,  
From heart to heart is stealing,  
From earth to man, from man to earth:  
--It is the hour of feeling.*

*One moment now may give us more  
Than years of toiling reason:  
Our minds shall drink at every pore  
The spirit of the season.*