

# Our Gene Pools are Expanding!

But that suggestion is a dangerous myth.

**What all politicians and the general public should know about gene pools**

*All underlined words are links on the original story at [www.dnaalert.net](http://www.dnaalert.net)*

To understand the meaning of Gene pool, there are two other words that should also be understood: Genotype and Phenotype. These terms are quite simple but very important. We will start with phenotype. Phenotype means what an individual looks like. The word comes from a Greek word Phainetai. In English it is pronounced 'fehnehteh' with the accent on the first syllable and means 'it looks like'. Genotype means the limited genes that are carried in an individual to make it like it is. Those genes carried in a genotype can dictate how a creature or plant will look, taste, or how it will be shaped (morpheme) etc.

A simple way to illustrate these three words: gene pool, genotype and phenotype; is by way of the Irish potato famine. Potatoes originated on the west coast of South America, on which is found the original great gene pool of potatoes, a [Vavilov Centre](#).

In the early heady days of navigation and exploration from Europe into the New World and potatoes were discovered, potatoes were seen as a wonderful resource for the gardens of Europe. Of course in those days the meaning of a 'broadly based gene pool' meant nothing; although with a little thought most everyone of those early navigators would have known immediately what the concept meant. Meaning, that brothers and sisters do not interbreed for too long, if they do their progeny will suffer some very serious consequences.

It appears that the first potatoes taken to Europe originated from a few gardens, meaning from a few small gene pools. In each of those small gene pools however, there would have been great resilience against pest and disease. Those original primitive cultivars are called Landrace varieties, meaning they are genetically very close to their wild relatives; genetically very strong.

So if a disease happened into one of those ancient potato gardens, the problem was usually not serious. All the gardener had to do was go see a neighbour a little farther down the road where the potatoes were genetically a little different and natural resistance was sure to be found.

In those 'early days of agriculture'; this means for most of the world's history of agriculture, monoculture (huge acreage of one type of crop) did not exist. Monoculture is a dangerous new trick, economically driven, that leaves the world very vulnerable and more reliant on chemicals that are slowly poisoning our planet.

It appears that three original potato types were taken to Ireland; the Cup potato, the Apple potato and then by 1810 the Lumper potato, which grew well in poor soils and so spread rapidly. In those days the English were stealing much of the food from the Irish, so they were very hungry people, however after the potato arrived and got well established it was relied upon by a great percentage of the population of Ireland as a staple.

Potatoes have proteins as well as carbohydrates and the Irish took to the potato so well that many people believe that the potato originated in Ireland. For many years, countless Irish families filled their tummies with potatoes though not much else. Then the population started to grow and nobody foresaw the looming disaster of the consequences of a narrowly based gene pool.

Sure, the potatoes in Europe belonged to that great gene pool, though that gene pool was cut off and there was no 'gene flow' with the Vavilov Centre in South America (the home of the potato).

Now let's suppose that in those days in Europe there was much plant breeding and the plant breeders of Europe were developing many new varieties of potato. However, let's also suppose that there had been a disaster in South America and the whole west coast of that continent had suffered a huge earth quake and the Andes had slid into the Pacific Ocean; the Vavilov Centre for potatoes had been lost forever.

Let's pretend, to illustrate this point, that the only potato that they had to work with was the Lumper potato. The plant breeders of Europe however were doing their best with what they had, though they could only now work from a very narrowly based gene pool; a few small genotypes.

The plant breeders were rather clever and they produced potatoes of many colours, shapes and even of a few different flavours and textures; but those potatoes were still all brothers and sisters. Each potato was of a very narrow 'genotype' though each 'phenotype' of potato that was bred, looked quite different from the next.

The genotype can also dictate resistance to a certain disease, but it can also dictate vulnerability to disease, and that is precisely what happened in the Irish potato famine. It would not have mattered how many types of potatoes the plant breeders had bred from the narrow gene pool that was available to them. You cannot make new genes; breeders can only work with what they have. Regardless of what the resulting offspring look like (phenotype), if the gene pool started off narrow it will remain narrow until it receives an infusion of new genes; that is basic biology.

In the eighteen forties a new variety of potato was introduced into Europe that just happened to carry blight. In South America, the blight would not have been much of a problem, because that is the land of potatoes; so for every disease there is also to be found resistance to that disease. It would not have mattered how many varieties (phenotypes) of potatoes the breeders of Europe had bred the genotype still told the potatoes of that narrow gene pool, "blight will kill you".

And so it was that in the eighteen forties when the blight hit the potatoes in Ireland, within two weeks every potato turned to mush and around a million people died of starvation; the rest is history.

It does not matter how many genotypes or phenotypes you can come up with, you cannot broaden your gene pool, but you **can** narrow it.

This is the reason that there are many who are concerned with the loss of the remaining so-called Wilderness areas and the so-called primitive gardens of the world. These areas hold the gene pools for the future survival of our children. You cannot put seeds into a Seed Bank (glorified refrigerator) and suggest that all will be well on planet earth. Seed Banks are important for security but that is not how nature works; nature can survive without us but we cannot survive without nature. *That last quote about us and nature came from an Australian aborigine.*

The Vavilov Centre for corn (maize) in Mexico has already been contaminated with genetically engineered DNA that was carried in pollen owned by a giant chemical corporation; probably Monsanto. The company that owns the DNA that contaminated the Vavilov Centre of Mexico knew precisely what they were doing. What they have done can only be described as a form of biological terrorism against the citizens of the world.

There are moves afoot to contaminate the [Vavilov Centre of Mesopotamia](#) with patented DNA owned by giant chemical companies. Mesopotamia, which is in Iraq, is the World's only Vavilov Centre (natural repository for wheat and barley) and many other valuable food plants. The people responsible for these outrages are some of the most dangerous and irresponsible people on our planet and yet there are still some mercenary lawyers and ignorant judges that will defend them.

Genetically engineered crops and monoculture threaten the future food security of our planet and that is a biological fact. Any person that peddles the nonsense that GM crops will feed a starving world should reflect on the basic laws of nature and biology, **especially** if you are a Genetic Engineer.

Paradoxically and sadly, many Genetic Engineers will seldom discuss the implications of narrowly based gene pools or the patented DNA that is legally owned by a chemical company and is carried in the pollen. Nor will they ever bring up the subject of the [Terminator gene/Traitor gene](#). Many Genetic Engineers seem to have gone into denial. One day there are sure to be valuable wonders from genetic engineering, but today is not that day.

Each time a crop is contaminated with genetically engineered DNA another genetic bridge is burned. Do you think it is very responsible to contaminate the only gene pools that are available for the survival of our children?