

TO NARROW A GENE POOL IS DANGEROUS

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

The underlined words are links on the original story at www.DNAalert.net

To understand the meaning of Gene Pool, there are two other words that are very useful to help you understand the term gene pool: 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 phenotype comes from a Greek word φαίνεται (φαίνεται) and means 'it looks like'; it is pronounced 'féhnehteh'; with the accent on the first syllable. 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, smell or how it will be shaped (morpheme) which comes from a Greek word for shape μορφή, which is pronounced morphí; with the accent on the last syllable.

A simple way to illustrate these three words: gene pool, genotype and phenotype; is by way of the Irish Potato Famine. Potatoes originated along part of the Andes mountain range on the western side of South America; here is to be found that 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, they 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; because that would be a 'narrowly based gene pool'.

It appears that the first potatoes taken to Europe originated from a few gardens, meaning from a few small (narrow) 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 the '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. Monoculture is a huge banquet for pests and diseases; that is just basic biology.

It appears that originally three varieties of potato were taken to Ireland, firstly the Cup potato, and the Apple potato and then by 1810 the Lumper potato arrived and that potato grew well in poor soils and so it spread rapidly. In those days the English were stealing much of the food from the Irish, so the Irish 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 some protein as well as carbohydrate 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 but 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 in present day Peru, though that gene pool was cut off by the Atlantic Ocean and then by the Andes mountains to the west and so 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 massive earthquake and the Andes had slid into the Pacific Ocean; and so let's suppose that the Vavilov Centre for potatoes had been lost forever.

Let's pretend also, 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, but now they could only 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 may have looked quite different from the next.

A 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 (nature).

In the 1840s a new variety of potato was introduced into Europe that just happened to carry a disease called 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** would still have 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; and the rest is history; that is how **The Irish Potato Famine** came about. 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.

The Vavilov Centre for corn (maize) in Mexico that extends south through Peru has already been contaminated with Monsanto's genetically engineered DNA, carried in pollen. Monsanto that contaminated the Vavilov Centre of Mexico knew precisely what they were doing. What they have done can only be described as biological and agricultural terrorism. Food Safety of Australia and New Zealand (**FSANZ**) have just given the go-ahead to start the contamination of Australia with GM corn owned by Monsanto and Dow and they kept their decision secret – how corrupt can they be?

The people responsible for these outrages are some of the most dangerous and irresponsible people on our planet. To irreparably damage the genetic bridges that must be protected by us and passed on intact to our children for their survival can only be described as child abuse.

Those ancient farmers and their 'Primitive gardens' and some modern farmers, on their farms, 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 nature and us came from an Australian aborigine.

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 their pollen. Nor will they ever bring up the subject of the [Terminator gene/Traitor gene](#). Many Genetic Engineers seem to have gone into denial. Most genetic engineers are 'engineers' they are **number-smart** but they are not naturalists so they are seldom **nature-smart**. One day there may be valuable wonders from genetic engineering, but today is not that day - it is still too dangerous.

Each time a crop is contaminated and damaged with **genetically engineered DNA** another genetic bridge is burned forever. Do you think it is very responsible to contaminate the only gene pools that are available for the survival of our children for nothing more than corporate ignorance and greed?

WWW.DNAalert.net

THIS IS COPYRIGHT HOWEVER IT MAY BE COPIED FOR DISTRIBUTION UNALTERED – PLEASE PASS IT TO A POLITICIAN