

Work of the Koanga Institute

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New Zealand's traditional food plants have been regarded as taonga (sacred treasure) in the past, just as our native trees, shrubs and herbaceous plants were (and still are) highly regarded for their timber, medicinal, spiritual, aesthetic and other qualities.

Families and communities have always kept their own plant seeds and passed them down through the generations. Over thousands of years these food plants have co-evolved with humans.

Those of us intimately working with heritage food plants have a knowing, as did the old gardeners and healers, that these traditional plants contain the potential to nourish us in ways that are often hard to explain. This nourishment extends beyond their nutritional value, and our heritage plants have qualities that surpass modern cultivars bred exclusively for commercial production and making money for shareholders of large corporations.

For most of our existence, humans have eaten food that was nutrient dense; animal fat and meat, along with seafood, seaweed, herbs, wild vegetables and greens, berries, fruit, nuts, birds, eggs and dairy products. The extent to which we are able to provide our bodies with an unpolluted and toxin-free source of nutrient dense fatty acids, minerals and vitamins determines how clearly our food is able to communicate with our DNA and in turn it is our DNA that communicates with our cells determining how they express and how strong our genes remain when passed on through our descendents.

Until recently scientists termed the regions of our genome with no discernable function as 'junk DNA'. It has now been realised that this 'junk' or 'non-coding regions' of our DNA actually do have various biological functions (www.psrast.org/junkdna.htm). It is only now with recent studies

in epigenetics that we understand that the 'junk DNA' places 'tags' containing instructions on the DNA according to how well we are nourishing the DNA via our food and the way we live. We now know that the "environment determines expression" of our DNA (Gedgaudas, 2009; Shanahan and Shanahan, 2009).

The food plants our ancestors brought to this land (both Māori and Pākehā/ European) were those they regarded as most likely to maintain the health of their families. These food plants were very precious and people went to great lengths to transport their seeds safely.

Our ancestors came from several distant lands and their boats stopped at many places along the way. A huge selection of food plants came on the waka (Polynesian canoes) and on European sailing boats. Plant varieties still come in with new immigrants because they, like our ancestors, regard their food plants as a vital part of their lives, development and health maintenance. In every sense of the word food plants are an integral part of our 'culture'.

Since arriving in this country our food plants have been through a process of both natural and human selection over the past 200–1000 years. Over this time, the enormously wide range of plant material that came here has narrowed down to what grows best under New Zealand conditions.

Sometimes we find that these food plants naturalise and self-seed to become naturally adapted to various environments. For example, the wildling peaches that grew around the Kaipara Harbour for more than 100 years (from the 1860s to the 1960s) adapted to northern warm winters and high humidity all year round. These regionally adapted peaches perform exceptionally well compared to the typical peaches brought in from colder regions. They came to New Zealand as seeds with the early

ship captains, whalers, sealers and missionaries. They are a very old type of peach that is relatively genetically stable (so they grow true to seed) and similar to the original peaches of Tibet. I have found over the years that each major valley system throughout Northland evolved their own slightly different version of this peach, with more than 150 years of adaptation through natural and human selection. These 'river' peaches are maintained in the Koanga Institute collection (Fig. 1) and are available from the Institute as scion wood to those who choose to propagate their own or as grafted trees (from Edible Garden in Palmerston North and some other retail outlets).



Fig. 1 River peaches are the peaches that used to grow wild around the shores of the Kaipara and Hokianga harbours.

Other plant varieties have survived by way of old plantings and saved seed because they have been treasured by a particular person or family and have been taken care of through the past couple of generations when so many other varieties have been lost. They were obviously the best plants, those that were worth the extra effort and they are now those that have been through a process of human selection.

A good example from the Koanga Institute collection is the Bohemian sugar peas (Fig. 2). Most peas are rather difficult to grow in many parts of Northland because of the humidity causing mildew on the leaves. However, the Bohemian sugar peas are outstanding and largely mildew-free. They came to New Zealand in 1863 with the Bohemians who settled in Puhoi Valley, Northland, and seed

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was selected each year from those that thrived in that warm humid valley. The sugar peas were grown out every year, long after most families stopped producing their own food, because they were recognised for the gift they held. They were passed on to the Koanga Institute in 1997 and are the most delicious peas I have ever tasted. I have never been sent another pea like them, nor have I seen any of these particular peas in any overseas heritage seed catalogue.



Fig. 2 The Bohemian sugar peas are the best peas out; they are eaten raw and whole and are the sweetest I've ever tasted.



Fig. 3 Dalmatian beans.

The Dalmatian beans (Fig. 3) were the first beans to be gifted to our collection. They are another great example of a line of seeds that has never been available commercially in New Zealand, although they are well known in Northland because they are 'simply the best'. These beans came to this land with the Dalmatian gum diggers. They are large, tender, sweet and a light green colour with purple streaks on the sunny side of the beans. They have been in Northland for more than 100 years.

Our Alma drying tomatoes are another great example (Fig. 4). Again, they came to this land with the Dalmatian gum diggers. Back in their homeland of Yugoslavia they were called Italian tomatoes. Once in New Zealand they became known as Dalmatian tomatoes. I called them Alma tomatoes because I knew

nothing about them when they came to me except that they were given by a person named Alma; I now know that they are the traditional Italian drying tomatoes known all over the world as Principe Borghese. We have our very own New Zealand adapted version of the most famous drying tomato in the world!



Fig. 4 Alma tomatoes, the original Italian Principe Borghese, world famous for their qualities as a drying tomato.

Our Scottish broadbeans are yet another of the hundreds of examples I could tell you about. They came to this land with a settler from Scotland around 1863, Mr Jack Watts who settled in Waimate in the South Island. They are well known because they are excellent croppers and retain a beautiful green colour when cooked.

Through my work over the past 30 years collecting heritage food plants, both fruit trees and vegetables, I have come to understand that they are still just as precious as they were always believed to be by our forebears. Our future health and survival may well be as dependant on them as it always was. Not only are they the food plants that our forebears co-evolved with, but they have also been through a process of adapting to this land.

It is generally acknowledged that the overall health of our ecology, the diversity and interconnectedness of it, is what keeps life on earth as we know it happening. Just as a blanket woven with a huge number of finely woven, multicoloured, closely connected strands will be strong, so will life on earth be strong if we take care of all the threads. Our health will be strong if we take care of the range of food plants we need to maintain our bodies. Over the past 100 years or so we have lost more than 90% of the vegetable varieties (FAO research in the 1980s – see McLeod, 1994). This has to put humans on the threatened list in the eyes of anyone who understands ecology! Even more

reason to take care of what we have left and treat it as our taonga, and essential for our future.

We now have a lot of science to show us that plants bred in recent times, and grown by agribusiness, do not contain anywhere near the potential to nourish us when compared generally with heritage lines. From the research done by Central Tree Crops Research Trust (www.treecropsresearch.org) we can see that heritage apples generally have around eight times the antioxidants when compared with shop apples of today – even more reason to take care of what we have left from what we once had!

The New Zealand Government signed the Rio de Janeiro Convention on Biodiversity in 1992 which recognised the value of our cultural food plants and especially our agricultural seeds, and committed to taking care of these seeds and plants. It has never done so, instead allocating all of the budget for biodiversity to native plants. It is up to us, the gardeners to take care of our cultural taonga, as it always has been.

Since World War Two, most western countries (including our own) have been so preoccupied chasing export dollars that all the investment has gone into breeding food plants that will earn income from the wealthy countries of the northern hemisphere, including Japan, Germany, England and the USA. These food plants are bred for uniformity, storage qualities and long shelf life to make it possible to export them abroad. Appearance is also very important but nowhere on this list of selection criteria do we have nutritional value, disease resistance or usefulness to the local cooks. I cannot believe that even taste is way down on the list. As these new varieties became those that commercial growers and orchardists had to grow to earn export dollars, so they became the varieties the nursery industry had to raise to make a living. As supermarket consumers, we had to accept the second grade fruit from the export varieties because that is what our supermarkets were full of. These also became the only varieties that our garden centres were selling because it is easier for the nursery industry to grow a few more of what they were already propagating.

And so, over a period of about 60 years, our young folk no longer knew what the old fruit tasted like or what they were missing out on. The old trees were not valued and began disappearing.

Over the past 30 years the Koanga Institute has been actively collecting, saving and making available again to the public, as many of these heritage food plants (and heritage flowers) as possible. We fully believe in their importance for our future. We are doing everything we can to collect and grow out and get back into as many people's lives as possible our taonga food plants so our grandchildren will come to know them again, for the good of the whole. We currently hold in our collection about 700 seed lines and some 300 bio-regionally (Northland and northern New Zealand) adapted fruit tree cultivars. The vast majority of these came to New Zealand with our ancestors and are most likely to be the food plants best able to nourish us. They will only be saved if we, the gardeners of New Zealand, continue to grow and maintain them.

Our members are the life-blood of our organisation, the more members we have and the more support we get the more work we can do. See our website (www.koanga.org.nz) for membership information. A critical part of our work is education and supporting new and skilled gardeners. We have a comprehensive workshop program along with a pretty special apprenticeship program, alongside our new Koanga Institute Diploma. These initiatives have been developed

to encourage and support our children and grandchildren to walk a path with nature once again, and find ways of living that honour what has always been regarded as sacred.

When we collect seeds and fruit trees we also collect the stories where we can about these food plants. *Who brought them to this land? How did they get here? How were these plants grown? And how were they eaten?*

These stories are part of the whakapapa (genealogies) of the plants and they are part of the whakapapa of the people too. It really makes a difference when you know the stories of the plants you are eating – try it sometime!

There are many ways you can become part of the circle of co-evolution with our food plants again, which is what is required if we are to save them. You could:

- Become a member of the Koanga Institute
- Gift a membership to somebody else who is a gardener or who will appreciate supporting the saving of the seeds
- Buy seeds, books and garden products or join a workshop from our website where all profits go back to saving the seeds
- Send us a donation – we are a registered charitable trust so all donations are tax deductible
- Remember us in your will
- Buy some of our seeds and save your own from them and begin that process of co-evolution in your family once again

- Send us any heritage seeds or food plants or flowers you still hold that may be endangered along with their story – we'd love to hear from you.

By recognising the valuable work of the Koanga Institute, the Royal New Zealand Institute of Horticulture has gifted us an opportunity to thank all of you who have supported us over the years and to connect with those of you who may like to become members and support us into the future.

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Kay Baxter is the CEO and co-founder of the Koanga Institute. In 2000, Kay received a Winston Churchill Scholarship to study seed saving in the USA. In April 2010, she received the RNZIH Award in Garden History (*New Zealand Garden Journal*, 2010, Vol. 13, No. 1: p. 26).

