

* INCLUDES FRUIT TREE CATALOGUE *

KAY'S
PEACH
GUILD



GOUMI

PERENNIAL LUPINS

WISTERIA

ECHIUM

ROSA RUGOSA

UDO

ALFALFA

HONEYWORT

COMFREY

WALKING THE EDGE

KOANGA INSTITUTE
CATALOGUE FEBRUARY 2014

www.koanga.org.nz



Our Mission

There's a movement going on that doesn't know it's a movement," attorney Ted Johnson said to me (he's one of those revolutionary attorneys devising new designs). What's under way is an ownership revolution. It's about broadening economic power from the few to the many and about changing the mind-set from social indifference to social benefit. We're schooled to fear this shift, to think there are only two choices for the design of an economy: capitalism and communism, private ownership and state ownership. But the alternatives being grown today defy those dusty 19th century categories. They represent a new option of private ownership for the common good. This economic revolution is different from a political one. It's not about tearing down but about building up. It's about reconstructing the foundation of ownership on which the economy rests.

- Marjorie Kelly, from "Owning Our Future. The Emerging Ownership Revolution"

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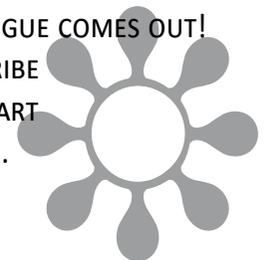
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The vision of the Koanga Institute was born out of 30 years of collecting heritage fruit trees, vegetables and flowers by Kay Baxter and others, in association with the Koanga Institute. This nationally important collection is in turn built on the foundation of hundreds of generations of gardeners and farmers who have nurtured the biodiversity and cultural heritage upon which civilisation has developed (we have co-evolved with our food plants). Much of Koanga Institute’s work was in response to the fact that in the last 100 years much of the genetic biodiversity in food plants, all over the world, has disappeared as a result of the industrialisation of our food production.

In the process of “saving the seeds”, all those involved have come to the wider realisation that not just the ecology of our “food evolution” has been compromised by industrialisation, but many other aspects of our “human ecology” have likewise been compromised, and we can’t address the one issue (e.g. seed saving) in isolation. Seed saving is one aspect of the broader need to address our “human ecology”. Thus, while an immediate priority for the Institute is seed protection and conservation, it is also committed to contributing practical holistic solutions in the wider field of sustainable living:

- *Protection, conservation and development of NZ’s genetic and cultural heritage food plants*
- *Understanding the connections between soil health, plant and animal health and human health*
- *Research into the practical strategies and techniques required for communities and individuals to be self reliant, with a focus on regenerative land use, nutrient dense food production and processing, appropriate technology and community development.*

IF THERE IS A STAR IN THE CIRCLE,
YOUR MEMBERSHIP EXPIRES BEFORE
THE NEXT CATALOGUE COMES OUT!
PLEASE RESUBSCRIBE
NOW AND BE A PART
OF THE SOLUTION.



WALKING THE EDGE

WELCOME TO THE FEBRUARY 2014 KOANGA CATALOGUE!

The past 6 months have been the greatest challenge of my life... and it's not as though I haven't faced some big ones. Yes, it's been stressful, extremely stressful, and some amazing things are happening too, which I'm very happy to share.



Zealand people did not value our heritage seeds enough, they could still be lost... And that a time would come when that support would be put to the test.

That test came over 2013. We were challenged on many fronts, and in the end it came

down to us needing people on our team with skills we did not already have, as well as a large amount of money.

We needed outstanding project management/business development and we needed the money to buy this land.

It's not an easy thing to go on TV and radio, and all over the social media to ask for financial support.

Putting ourselves out there has really felt scary, and that feeling of vulnerability is never far away... walking the edge...

The other side, of course, of allowing ourselves to be vulnerable and open to support from a far wider group of people, is that that allows others to show their support for us.

For me 30 years of working to ensure the seeds were saved is something I knew I had to do, and I love doing... a gift and a responsibility. I'm doing my best and with the Koanga team, including all of our members and staff, I think we have done an amazing job. We have lost some, and we have saved a lot, and we have what I believe we need, to walk into a strong future. A future where our food plants are fully able to nourish us, a future where growing our food will grow soil, improve the health of the ecosystems around us, a future where life is honoured and we as humans re-enter the age old process of co-evolution with the ecology around us.

I have known for some time that in the end if a wider group of New

Zealand people did not value our heritage seeds enough, they could still be lost... And that a time would come when that support would be put to the test.

It has been such an amazing journey to have had so many people from all walks of life, all over New Zealand contact us and offer so much, showing their support in many ways. We've had people we have done design work for many years ago recontact us and gift money, we've had many, many members and supporters gift small and larger amounts of money, we've had several people (around 10) offer to lend us money to keep things safe in the short term, and we've had 3 groups of people working to create significant new villages similar to ours, contact us to say that they are willing to put money up front in exchange for goods and services in the future to support us... because they see the value of what we hold here!!! We are now receiving business sponsorships from businesses keen to support our work and feel like part of the family. Amazing and wonderful and life affirming... Our family feels as though it has just got a whole lot larger and that is exactly what needed to happen!

Things are shifting, our time is coming... and so, just as the seeds (and trees and the stories and knowledge that goes with it all) have become so vulnerable and on the edge of extinction, the time has come for a wider group of people to see the value in what we hold and offer to support its survival.

This feels to me like an old pattern, something that continually repeats

throughout time... That does not however make the walking any easier.

I am so so grateful to all of you who have been part of this in whatever way you have supported us. Thank you thank you thank you...

Together we have held the land.

We have been gifted enough money now to meet our first deadlines, we have stopped the hill block from being sprayed, and we have had time to plan a stage two. We are now embarking on stage two of this project to bring in a significant amount of money to enable us to finalise paying for the land.

This winter we are doing a national tour where we will be talking and holding workshops.

Bob and I will be travelling first doing talks in 17 centres around the country. We will be closely followed by a Koanga team who will be teaching some of the workshops we teach here, and sharing as many of the skills we are learning as we can. The program for this tour, and the workshops we will be offering, is on page 7. Please support us and pass the word around, this is the final 'buying our land' push. It is also your opportunity to do one of our workshops or hear us speak without having to come here!

We have also created a structure whereby we are building relationships with other businesses in mutually supportive ways. Contact us (contact@koanga.org.nz) to see if that sounds like your business. We'd love to hear from you.

We have now until June the 30th to pull it all off. After the land is secured for all time within a Trust, we will be moving into development phase fast... putting the village on the ground that we see is a key part of holding the seeds. <http://kotarevillage.org.nz/>

Finally I would like to acknowledge the frustration many of you have felt with our website over the past year. We have simply had to put all of our resources into saving our land and seed collection period, and we are only now able to have the skills and energy required to improve the services we offer and get the kinks out of the website. Thank you for being so patient, things will only get better.

I fully understand how frustrating things have been for some of you, and I also want you all to know that you are supporting so much more than

simply 'seeds' and heritage trees etc. You are supporting a group of people against all the odds to walk a path that will put a model for the future on the ground that will act as inspiration and support for many others as the existing mainstream paradigm collapses and we are forced to find another way.

In the meantime of course the seeds are coming in, Mel is taking great care of our potato trial (please check out the potato trial project on the research section of the website), and the huge tomato grow out (tomato tasting on February Guided Tour day). Tamsin, Joshua, Millie, and Joseph, our garden apprentices and volunteers, are hard out taking care of all the gardens, processing seeds and getting them ready to send to you. ✱

Have a wonderful harvest season.
Arohanui, Kay Baxter and team

BEQUEST

Should you wish to remember the Koanga Institute in your will...

By making a bequest to the Koanga Institute you will be supporting us to continue our important work. This gift is one that you may not be able to make during your lifetime, but will ensure that our heritage plants are available for future generations as a resource for cultivation and genetic diversity. The Institute receives no external funding, and we rely on our membership fees and royalties from associated small businesses for support. In these changing times it feels very important that we continue to flourish and grow. We are very good at making a little money go a long way.

Please send a request for more information to:

Koanga Institute Bequests, c/- Koanga Institute, 96 Kotare Road, RD5, Wairoa, 4195

We will send you a leaflet outlining possible options and sample wording. This request for more information will be treated in strict confidentiality.

OBITUARY

*MAVIS SMITH of Totara House, Matakohē
- November 9th 1910 to February 2013 -*

We were saddened to hear that Mavis Smith died back in February 2013, aged 102. Mavis lived in Totara House, the house built for her parents in 1896, since her birth on November 9, 1910. Mavis was a founder member of the Kauri Museum in Matakohē and gifted her house and land to the museum to be an inspiration for future generations.

We first met Mavis back in 2007 when her first comment to Kay was "What took you so long? I've been waiting to see you for years!" At that time Mavis was well into her 90's and was still actively gardening. Each time we visited Mavis would share stories of her life and about a time when people had the skills and knowledge to live simply, when things were done seasonally and people worked in rhythm with nature. Mavis saw so much change in her lifetime that it is hard to comprehend. The time when people lived in a relatively organic and sustainable way is not that long ago and so many essential life skills have been lost from daily life. Meeting Mavis was an opportunity to hear about that way of living and inspiration for those of us trying to live in a more connected way.

The last time I visited Mavis was in June 2011 when she was only 100. She'd recently strained her back and my assumption was that it would be too much for her to come outside but Mavis was as determined as ever and we were able to have a lovely walk around her garden looking at some of her favourite roses.

In these days of easy mobility it was amazing to meet someone who has lived in the same house for their whole life, especially for over a century. Mavis had expressed a wish to die at home and, while sad that Mavis has gone, we were pleased to hear that she achieved this wish.

We thank you Mavis for your stories, your enthusiasm and your willingness to open your garden and home to others. It was a pleasure to know you and we feel privileged to hold plants from Totara House in the Koanga Institute collection. ✱

Gail Aiken



BECOME A MEMBER OF THE KOANGA INSTITUTE AND BE PART OF THE SOLUTION!

Over the past 29 years we have been instrumental in collecting and saving over 800 (mostly New Zealand) heritage vegetable seed lines and over 300 Northern heritage fruit tree lines. Together with the plant material we have collected the stories; the whakapapa of our food plants and the old people who carried them to today.

Growing out these food plants to make them available to our members and the general public, is a work of love rather than an economic proposition, which is why the Koanga Institute is a registered Charitable Trust. Membership is an opportunity for all of us to be part of this wonderful work.

∞ **New Zealand Membership: \$45 one year**

Full membership benefits as outlined below

∞ **International Membership: \$65 one year**

Full benefits as outlined below, for members with overseas postal address. Seeds will be posted at buyers' risk, and are subject to local customs laws and restrictions.

∞ **Community Gardens and Schools / Marae Membership: \$75 one year**

Full benefits as outlined below for Community Groups, Schools with Gardens, and Marae. A mixed bundle of 10 seed packets will be sent along with the "How to Grow Nutrient Dense Food" and "Save Your Own Seed" booklets. Please use just one email address per membership.

∞ **Life Membership: \$1000**

Full benefits as outlined below – for your lifetime!

KOANGA INSTITUTE MEMBERSHIP ENTITLES YOU TO:

- ✓ Receive 2 free catalogues each year: the July edition with a full seed description list, and the February one focusing on heritage fruit trees. You can choose between an electronic copy or a physical copy.
- ✓ 6 free Preservation seed packs per year
- ✓ One free Institute Booklet
- ✓ 10% discount on Koanga seeds
- ✓ Special Members promotions
- ✓ Monthly E-Newsletter
- ✓ Discount on selected workshops
- ✓ Know you are actively part of the solution!



NATIONAL SPEAKING TOUR

KAY BAXTER (KOANGA INSTITUTE)

TALKING NATIONWIDE TO RAISE FUNDS TO SAVE NZ'S LARGEST COLLECTION OF HERITAGE SEEDS AND TREES

TALK 1

SEEDS, HUMANS AND THE PROCESS OF CO-EVOLUTION

TALK 2

AN INTRODUCTION TO THE RELATIONSHIPS BETWEEN OUR FOOD, OUR HEALTH, AND THE GENES WE PASS ON

FROM 12TH MAY TO 6TH OF JUNE 2014

You may have heard that New Zealand's largest national heritage seed and tree collection is at risk. Kay Baxter is taking to the road to share her knowledge to help raise funds to save the seeds.

By buying a ticket to attend a talk on Kay's national speaking tour you will help us save New Zealand's largest heritage organic seed and tree collection from loss on the 29th June 2014.

Talk One Topic: Seeds, Humans and the Process of Co-evolution... for 99% of the evolution of the human species we have been in a process of co-evolution with our environment. Stepping out of that paradigm during around the time of the industrial revolution, and even further during this period of the industrialisation of our food supply, has been a disaster for human health and the health of our whole ecology. It's time to step back and redesign the way forward into that age old process again...

Talk Two Topic: An introduction to the relationships between our food, our health, and the genes we pass on... and the basics of cooking and preparing nutrient dense food.

The proceeds from the speaking tour will go towards securing the land that New Zealand's largest heritage organic seed and tree collection is held on. Koanga Institute is literally in a race against time to save the seeds by the 29th of June. Refer to here to find out more about this risk: <http://koanga.org.nz/urgent-save-organic-heritage-seed-tree-collection/>.

Talks will be held in 18 centres, all across both the North and South Island.

Following the Speaking Tour will be a **Workshop Tour, from June 4th until June 28th**, touring through Auckland, Christchurch, Nelson, Wellington and Napier.

Workshop topics will include: Cooking & Preparing Nutrient Dense Food; Regenerative Systems for Urban Small Animals; Urban Garden Design; Biointensive Gardening; Growing Nutrient Dense Food; Rocket Stoves & Solar Ovens; Design Your Own Forest Garden; Top Bar Beekeeping;

Please check our website for more detailed information and tour dates.

www.koanga.org.nz

2014 KOANGA WORKSHOPS FOR REGENERATIVE LIVING

We actively pursue and accumulate the knowledge and skills required to live regeneratively and simply in Aotearoa. Empower yourself with the practical skills to turn your dreams for sustainability into reality, and understand your own health in relation to our environment. Our workshops are full-on learning experiences - prepare to see the world through different eyes!

Workshops are subject to change. See www.koanga.org.nz/courses for further information. All workshops will be held at the Koanga Institute, which is part of Kotare Village, near Wairoa in the Hawkes Bay.

APPROPRIATE TECHNOLOGY WORKSHOP

17 – 23 February 2014 ☞ Tutors: Tim Barker, Bob Corker

If we are to have resilient communities we need to change the technologies that underpin our lives, not only to reduce our dependence on the global economy but to kickstart the home economy! We will discuss thoroughly the basic technologies, and design principles and patterns involved, and show you examples.

APPROPRIATE TECHNOLOGY INTERNSHIP

17 February - 23 March 2014 ☞ Tutors: Tim Barker, Bob Corker

A full time program for those wishing to get experience in designing and constructing appropriate technologies for self-reliance and living simply. The internship begins with a seven day workshop (see above). After that you will be working on hands-on practical projects in Kotare Village, covering solar heating and cooking, rocket stoves, biochar, greywater systems and much more, see www.koanga.org.nz.

TRADITIONAL FOOD PROCESSING AND STORAGE

7 - 8 March 2014 ☞ Tutors: Kay Baxter, Tes Rae, Shaked From

A two day workshop where you will learn traditional food storage methods that do not require sugar, bought vinegar or freezing so that you can save abundant produce for later use, preserving and in some cases, increasing the nutrient value of your food.

DESIGN YOUR OWN FOREST GARDEN

5-6 April 2014 ☞ Tutors: Kay Baxter, Shaked From
Learn the Koanga step by step process to design forest gardens (see p.28 for a definition). Mix of classroom theory, discussions and experience in the forest garden, incl. our nursery.

ANIMAL INTERNSHIP

7 April - 2 May 2014 ☞ Tutors: Bob Corker, Taiamai Corker

This internship covers the following workshops: Small Farm Design, Small Animal Selection/Breeding/Management, Top Bar Beekeeping, Home Butchering, and Holistic Management) plus gives you an extra 2 weeks to put your learning into practice and integrate it! We'll only accept 2 people for this internship

SMALL FARM DESIGN

7-9 April 2014 ☞ Tutors: Bob & Taiamai Corker
Learn to design your own small farm so that you can earn a living on a small area whilst regenerating the land. Select which animals will work best for your situation and best practice methods for management and breeding. Includes pigs, sheep, goats and cows.

SMALL ANIMAL SELECTION/ BREEDING/MANAGEMENT

10-11 April 2014 ☞ Tutors: Bob & Taiamai Corker
Best practise methods for management and breeding within integrated, diverse, regenerative systems, particularly those which do not require external food inputs and where animal health is paramount. Small animals include chickens, ducks, geese, rabbits etc.

TOP BAR BEEKEEPING

12 - 13 April 2014 ☞ Tutors: Tamsin

We will explain the main differences between top bar and standard beehive systems, and how you can have a healthy, productive beehive with no ongoing costs. The natural approach to beekeeping allows bees to regulate their own hive, which is crucial in the fight against varroa mite etc.

HOLISTIC MANAGEMENT GRAZING AND HOME DAIRY

14 - 15 April 2014 ☞ Tutors: Bob Corker, Taiamai Corker

Learn how to manage your pasture and cows following the Holistic Management system which has been shown to regenerate the land and increase grazing rates and animal health. You will also learn to milk a cow by hand or small scale machine and make basic cheeses and dairy products from the milk without commercial inputs.

HOME BUTCHERING AND MEAT PROCESSING

16 - 18 April 2014 ☞ Tutor: Taiamai Corker
Learn home butchering and processing skills for small animals; poultry, goats, pigs, sheep. An extremely popular hands-on workshop.

URBAN DESIGN

20 - 21 April 2014 ☞ Tutors: Tes Rae, Shaked From

Learn to make the most of your urban space both within your own backyard and public spaces whilst also ensuring food security for your family and neighbourhood. Our 200m² Urban Garden model will be used as a teaching space for this workshop.

PROPAGATION

28 June 2014 ☞ Tutor: Kay Baxter, Shaked From
An empowering economical way to begin your home orchard, and learn how to save your own local heritage trees. Includes plant material to take home & begin your own orchard.

PERMACULTURE DESIGN COURSE

1 - 14 September 2014 ☞ Tutors: Bob Corker, Dan Palmer, Kay Baxter & others

This will change the way you view your world and encourage optimism in the face of the many challenges today. Empower yourself with the knowledge and skills to be able to apply the

principles and patterns of Permaculture Design to all aspects of your environment and life. As well as covering the international curriculum we focus on daily practise of design so you will feel confident in understanding design and its application. 2 weeks of inspiration, learning and hands on experience, with experienced tutors who live what they teach.

SPRING INTERNSHIP GROWING SOIL, FOOD AND HEALTH

15 September - 21 November 2014 ☞ Tutors: Kay Baxter & others

10 weeks of intensive learning and hands on experience, including the 4 workshops below. Please see website for details. (Max. 6 interns)

PREPARING AND COOKING NUTRIENT DENSE FOOD

15 - 16 September 2014 ☞ Tutor: Kay Baxter
This course will look at the essential relationship between the quality of our diets and its reflection in our overall health and that of our children. You'll learn the principles of traditional diets, as documented by Weston Price, and how to prepare food following those principles.

BIOINTENSIVE GARDENING

22 - 24 September 2014 ☞ Tutor: Kay Baxter & garden apprentices

Learn the basic theory and practice of BioIntensive gardening, the most efficient way to grow vegetables, with amazing results. We use these methods, and encourage others to do the same. You'll leave this course with some real skills that to get your garden pumping.

GROWING NUTRIENT DENSE FOOD

25 September 2014 ☞ Tutor: Kay Baxter
A one day workshop covering the basics of growing Nutrient Dense Food, with an emphasis on making high quality compost and learning how to use a refractometer.

DESIGN YOUR OWN FOREST GARDEN

October 2014 ☞ Tutors: Kay Baxter, Shaked From (see opposite page for details)

PERMACULTURE DESIGN COURSE

February 2015

See opposite column for details. Please check our website for more details.

www.koanga.org.nz

KOANGA FRUIT TREES

Koanga fruit trees are available direct from Kotare Village, Wairoa, and from Edible Garden, Palmerston North.

We both mail order Koanga Gardens fruit trees around New Zealand. The Koanga Institute, at Kotare Village here near Wairoa, holds an annual Open Day for you to check out our developing Forest Gardens, and to collect your trees (see opposite page).

KOANGA FRUIT TREE CATALOGUE

You can order your trees on the enclosed order form, or you can go online and buy them directly on our website www.koanga.org.nz. You can also download this tree catalogue and order form from our website if you wish another copy.

This winter we have an excellent and growing range of **heritage fruit trees and berries** available for you. They have all been grown organically by artisan growers, either here at Koanga, or by Gail Aiken or Patrick Land in the Hokianga.

These trees and berries will be available to be **picked up from the Koanga nursery from Saturday June 28th 2014** (we will be available on June 28th to prune your trees if you wish). **We can also courier your tree orders to you from July 7th.** All of our trees will be open ground grown and bare rooted so relatively easily shipped.

Our nursery will not be open to the public throughout the year except for posted guided tours or by arrangement, however we will be available for tree sales from June 28th until August 30th 2013 by appointment only, Wednesdays and Fridays. Please email contact@koanga.org.nz

All trees will have a white dot on the north side, showing you how to place the tree in the ground - trees do better if planted facing the same direction as they were grown in the nursery. See our website for more details, as well as a planting guide for fruit trees. We will email all fruit tree buyers planting instructions before we send the trees.



WINTER SOLSTICE TREE DAY

We will be open from 11am – 3pm on **Saturday June 28th 2014** to celebrate trees and forest gardens here at Kotare Village. There will be an introduction to forest gardening, and a guided tour of our developing forest garden at 11am. We will be available to prune the trees you buy. We will provide a hearty broth based soup and sourdough bread for lunch at 1pm.

Everybody is welcome, you don't have to be buying trees!!! Please email us to let us know you are coming so we can plan for numbers.

This will also be an opportunity to stock up on seeds, seed trays for spring etc. See you here, but don't forget to order your trees before hand as numbers are very limited...

KOANGA PROPAGATION MATERIAL

One fantastic way to start or increase your own orchard is to propagate trees yourself.

If you need help to design an orchard, to learn how to propagate trees, or to save your own local heritage trees, then check out our workshop program at www.koanga.org.nz/courses where you will find loads of different workshops including Propagation (see page 8). The **PROPAGATION WORKSHOP** not only helps you gain the skills you need, but you also go home with heaps of plant material to grow your own trees.

It's possible to buy scionwood or cuttings from us in the Winter and then grow your own trees. For trees that require grafting, you'll need a rootstock (to graft onto) plus the scionwood to graft onto the rootstock. There are details of what we have available on our website:

www.koanga.org.nz/articles/fruit-trees

If you don't have internet access, please send a self addressed and stamped envelope to: Gail Aiken, PO Box 19, Rawene, 0443, and we will post the list out to you.

WE'RE LOOKING FOR FOREST GARDEN APPRENTICES!

See our website under 'Jobs' for more information.



KOANGA GARDENS

FRUIT TREE CATALOGUE 2014

It is with excitement we send this catalogue out to you all. This is a very special collection of NZ heritage plant material, gifted to us by the gardeners of this land. We believe every tree in this catalogue to be worthy of a special place in our lives today, for one reason or another. All trees in this catalogue have been organically grown by hand in a way that regenerates the land they were grown in. We'll send the planting instructions with your trees, so you can also plant them well, ensuring strong healthy growth and maximum nutrient dense fruit production.

Many of the trees offered here are from our **Northern Bioregional** collection. These trees have naturalised in the North where the winters are warm, and they have been through a 150 year process of natural and human selection in that climate. The significance of this is that they fruit well in warm winters. Cultivars with the same name grown south of the Bombay Hills and taken north, do not. That is the reason Kay began saving these old trees.

One of the good things about having this collection is that you can now buy trees that will fruit well in Northland, but we also now know they do very well when taken south again. Martin Crawford of Forest Garden fame in England is recommending that we should all be planting our orchards these days with fruit trees that came from 2 climate zones north of where we are, so that they will fruit in the future in warmer winters!

In the stonefruit section of our catalogue (except plums) you will notice we now offer more and more cultivars as seedlings. We are doing this because we believe them to be a superior way to grow our genetically stable heritage varieties.

Modern peaches do not grow true in the same way, and so we trial all cultivars before offering them to you.

The trees are stronger and more disease resistant, but grow in size to be somewhere in between the smaller Marianna rootstock and the larger peach rootstock. We tip the central leaders in the nursery to produce a low branched tree most suitable for home gardeners.

As well as being a stronger tree, we are able to offer them at a cheaper rate than grafted trees.

APPLES

Rootstock options:

MM 106: Developed for free draining lighter soils. A semi dwarfing tree, if well pruned can be kept to 2.5 m high and 3m wide. An excellent choice for home gardens if you have the right soil.

793: Large tree. Has been bred from Northern Spy and does well on heavy soils.

M26: Produces a dwarf tree. Can be espalliered, cordoned or grown as a staked tree.

Northern Spy (NS): The old rootstock that does best on heavy clays. Can easily be kept to a manageable size (3m).

Captain Kidd

A NZ bred apple by JH Kidd. Has been grown in the North for a long time and proved its disease resistance and excellent quality. A deep red dessert apple with bright red streaks all over and superb flavour. Ours came from Tom and Robyn Morrison near Warkworth, descendants of Red Bluffs Nursery Morrison family, one of the old nursery families in the North. Ripens March. **\$28**

1 year rods on: NS

Early Strawberry

A small flattish, very sweet, early apple ripening Christmas to late February. Green yellow skin with bright red streaks when ripe. Golden Delicious type flavour and texture, dessert apple. A very old variety coming to us from an old tree in Birkdale Auckland, and previous to that Papakura (Mr Tom Shepherd since 1896). **\$28**

1 year rods on: MM106, NS

Freyberg

Large pale green skinned apple, yellow when ripe. Crisp, juicy, very sweet flavour. Healthy, good cropper. Ripe late February to late March. **\$28**

1 year rods on: MM106, 793

Giant Geniton

This variety is an outstanding heavy reliable cropper and keeps well. It has green skin turning very pale yellow with

red streaks when ripe. It can be eaten as a dessert apple when harvested April onwards, or used for cooking in February. Looks and tastes a lot like a beautiful tree ripened Granny Smith but smaller and redder when ripe. Very healthy tree, the fruit needs to be removed in early years so the tree can get some size. It came to the Koanga Collection in 1987, originally from Phil Evans from Kohukohu, but also from Cloon Eavin from Pahi and was one of the very early apples planted around the North that have been taken care of because they did so well.

Branched 2nd year tree on: 793 \$36

Golden Russet

All of the early NZ orchards had a russet and they have been well remembered. It has only been in the last ten years that several Northland Russets have come into the collection and they grow well, taste fantastic and are disease resistant. The skin is totally covered in a golden russet, the flavour is very rich and full, and it develops more if the apples are picked for a week or two before eating. It is used as a dessert apple, and ripens in March. This one is from the garden of the late Ham Worsfold of Kaiwaka, a very special man, one of the old gardeners I'm really missing. A very special apple with wine and cheese! **\$28**

1 year rods on: MM106, NS

Also available as a branched 2nd year tree on: MM106, M26, 793 \$36

Haywood Wright

Bright red/golden russet skin, red coloured flesh, excellent texture and flavour, juicy, sweet, heavy reliable cropper. Outstanding apple! It was selected by one of our most famous NZ nurse men, Hayward Wright of kiwifruit fame. Ripens mid January- February and is a dessert apple. **\$28**

1 year rods on: MM106, 793

Jonathon

A well remembered commercial variety after the war and a predecessor of some of our more modern cultivars. It is a crisp juicy, sub acid large round green skinned dessert apple with a red streaky patch when ripe. Originally from Port Albert, ripens mid season. **\$28**

1 year rods on: MM106

Also available as a branched 2nd year tree on: MM106, M26, 793 **\$36**

Lady Finger Cider

This apple was given to us as a specific cider apple. We grew it to make cider but have been so excited about it as a dessert apple I doubt it would ever get to the press! It is a mid season, bright red with a golden russet on the skin, sweet and rich, full of flavour with a tang of its own. **\$28**

1 year rods on: MM106

Also available as a branched 2nd year tree on: MM106, M26, 793 **\$36**

Lord Nelson

Excellent cooking apple and had good disease resistance in the North, having been selected and grown there for over 150 years now! Ripens January. **\$28**

1 year rods on: MM106, 793

Mayflower

A late apple of medium/large size, round, flat, with green russeted skin. A beautiful dessert apple, good for drying, cooking and juicing. Excellent old fashioned full flavour. I'm told this apple came into the Hokianga in a barrel of pips in the 1850's with the Rev Mr. Knaggs who planted them and chose this one as his favourite. Ripens March April. **\$28**

1 year rods on: 793

Also available as a branched 2nd year tree on: M26, 793 **\$36**

Northern Spy

Delicious, juicy, rich sub acid aromatic, white fleshed, fine grained, tender dessert apple. Green pale yellow skin in shade, streaky red purple in sun. A very well known and loved heritage variety. Ours came from the old Bert Davies orchard in Wellsford. Plant only with other apples for cross pollination. Ripens March April.

Branched 2nd year tree on: M26, 793 **\$36**

Red Spy

Large, round, flatish, very shiney red apple. Juicy sweet, better dessert apple than Northern Spy but similar, old-fashioned winey flavour, ripe in March. Excellent drying juicing and cooking as well. Keeps well. Originally a sport of Northern Spy, and were very well known around the Kaipara Harbour amongst the orchardists of the mid 1900's. We have found Northern Spy apples all over the North but not as many Red Spy apples. This one originally came from Kaitaia. **\$28**

1 year rods on: MM106

Reinette de Canada

Green Skin with a brown russet when ripe. Medium size, super heavy, reliable, healthy cropper in Northland, tart full flavour, cooking only! Ripens March April/May. Originally from Te Hana.

Branched 2nd year tree on: M26 **\$36**

Russet Matakana

Golden russet skin, rich deep flavour, best after picked for two weeks, similar to but different to the Golden Russet, this was the variety found around the Matakana area. Sent in by a member around 1990. **\$28**

1 year rods on: MM106, 793

Willie Sharp

A well known apple in NZ in the mid 1900's. Pale yellow skin when ripe, similar in looks to Golden Delicious but firmer, with excellent flavour, sub-acid, sweet, juicy, heavy cropper, excellent for both dessert and cooking, with a tang modern apples just don't have! Gifted to the Koanga Collection by Bert Davies of Wellsford fame who also gifted us his entire pear collection. This apple was actually bred in NZ by Mr Sharpe who was one of our early NZ plant breeders. **\$28**

1 year rods on: MM106

Worcester Pearmain

Large, round green skinned fruit, maroon blush on sunny side when fully ripe. Heavy reliable cropper with outstanding health. Fluffy when cooked, with a great flavour. In the Koanga Collection since 1987, origin unknown. Ripens mid / late season. **\$28**

Also available as a branched 2nd year tree on: 793 **\$36**

Zimmerman

Large, elongated, conical, square bottomed apple with bright red streaky skin, excellent rich, juicy, sweet as a dessert apple. This one originally came from the Chatham Islands. Ripens March. **\$28**

1 year rods on: MM106, 793

BERRIES

This collection of NZ heritage berries has come to us from many people around New Zealand, however a significant part of the collection came from Henry Harrington.

A growing part of the collection is from a member and Koanga Seed Curator, Wendy Evans, who lives near Wellington and collects heritage berries. We expect our first significant fruit crops here next season, but in the meantime offer a currant and 2 gooseberries. She has named her collections after the places she found them.

BLACKBERRY Pouto

The Pouto blackberry came to us from Logan Forrest's family home at Pouto, the old McLeod homestead. These "bush" type blackberries grow straight up and are very thorny. They produce ripe berries around Christmas time and are delicious. On Logan's farm they are now naturalised and managed by the sheep, who nibble the tips, keeping them pruned and berries accessible to us and in the sun for ripening. They are not invasive but do send underground suckers in the vicinity of the original bush. Sheep control them perfectly, it requires more effort in a garden! **\$16**

CURRANT Giant Ruby Red

Also from the Henry Harrington Southland berry collection. **\$16**

CURRANT Pauatahanui

From the collection of Wendy Evans. **\$16**

ELDERBERRY Adam

Fast growing, large bunches of black berries, even in warmer areas of New Zealand. Highly medicinal fruit and flowers. Traditionally used for chest complaints. **\$16**

GOOSEBERRY Large Black Red

Outstanding gooseberry, large sweet red skinned! This gooseberry came from the Henry Harrington collection. **\$16**

GOOSEBERRY Large Red Te Kuiti

An especially good gooseberry Henry liked and thought worth saving from an old friend in Te Kuiti. **\$16**

GOOSEBERRY Levin Early

This gooseberry came to the Koanga Collection from Wendy Evans. It is an old early one from the Levin area. **\$16**

GOOSEBERRY Pauatahanui

From the collection of Wendy Evans. **\$16**

MULBERRY Black (Morus nigra)

Outstanding human food as well as chicken and pig food. **\$16**

RASPBERRY Lake

A red raspberry from the lake Rotorua area. It is a Christmas fruiting variety and a repeat fruiter in autumn, that is prolific and suckering like the Yellow one. These raspberries grow into patches, and require managing. Beds with wooden sides could be useful in very free draining light soils. They like moist soils. **\$16**

RASPBERRY Non Suckering

Non suckering raspberry with outstanding red fruit, grows very tall so needs tying to wires etc. Sent in by a member. Fruit ripens around Christmas time. **\$16**

RASPBERRY Yellow

This outstanding raspberry was well known all over NZ 100 years ago. It has come into our collection from many places, incl. the early settled gold mining areas and along rail tracks. Will fruit a little the first year, full fruit production the following year if they are taken care of. First fruiting around Christmas, repeat fruiting in autumn. Average sized pale yellow fruit, one of the best eating raspberries! An added bonus is that the birds don't find them. Fruits well all over New Zealand, needs training and desuckering. **\$16**

FIGS**Batley**

A fat, mid season, squat fig with green skin, white flesh, very sweet excellent flavour. This is a very reliable cropper, and is an outstanding fig from the old Historic Places Trust house at Batley on the Kaipara. This house is the original house belonging to the old fish factory near the Otamatea marae, the same place our Batley peach comes from. Mid season ripening. **\$16**

Black

Small dark skinned, pink-fleshed fig, creamy texture very sweet skin. An early fig, best for marginal areas that may experience cooler summer, ripens March. Only one crop per year. From the old orchards of Oratia. **\$16**

WORCESTERBERRY Henry's

Very thorny vines, with berries like a very large currant or small black round gooseberry. Tastes like a sweet gooseberry. Regular winter frosts are needed to get a good crop. If kept trained, it's easy to manage. We first heard about them years ago when I visited Henry Harrington; he had trained (espalliered) it to cover the entire south side of his large shed (in Southland!), and organised it so that he could hang a bird netting over them - they will last on the vines ripe for several months, until Easter down there. They are one of the fruits he remembered from his French grandparent's (de Malmanche) garden on Banks Peninsula when he was a child. **\$16**

Hyndemans

These are old figs from the early settlers around the Kaipara Harbour. Two crops if you don't prune it - the first around Xmas, the next in March/April. Small figs with a purply skin and silky pink centre. Quite different from the Black Fig, I think this is the old Malta fig. Very good for drying. **\$16**

Kaeo

A very large long fig, with green skin that turns amber when ripe, light red flesh. Early crop at Xmas time and main crop late season. This fig came to our collection from Jim Cox who collected it in Kaeo many years ago as an original fig of that area. **\$16**

GRAPES

Bishop Pompallier

Bishop Pompallier is a large black grape, sweet with a full flavour, excellent as a dessert grape. Originally from France, this variety came out from France with Bishop Pompallier, and came to us via the Andrews homestead in Kohukohu. Disease resistant, ripe in March. **\$16**

Black Dalmatian

This grape comes to us from a very old Dalmatian orchard in Kohukohu. Outstanding disease resistance and delicious strong flavour. We believe this was originally used as a wine grape, it has very dark skin, a musky flavour and lots of tannin. Also good as a dessert grape. Ripe in late March. **\$16**

Niagra

Niagra grapes are an excellent choice for the organic home gardener. A very early white dessert grape, sweet with a lovely mild flavour. Ripens early March. Easy to grow with reliable heavy crops. **\$16**

Torere

Tiny but very sweet thin skinned black grapes, outstanding table grape. These plants were grown from a 100+ year old vine that covers over 1/2 an acre in Torere in the eastern Bay of Plenty. They are like currant grapes and may well be. **\$16**

White Dalmatian

Originally from Kohukohu, an old Dalmatian orchard in the Hokianga. This is a very sweet grape with a rich deep flavour. Ripe in April, after Niagra. **\$16**



OLIVES

The olives in our collection come from the Pouto area. Over the years these trees have had a lot of attention, and many have been tested for oil quality etc. The oldest tree was carbon dated in 1970 to be 200 years old. The local stories say that these olives came with the Portuguese and Spanish whalers and explorers in the 16th - 17th centuries. There are many ancient trees naturalised, self seeding and suckering in the area.

We have selected what Logan Forrest considers to be the best dual purpose oil/pickling olive, and the largest greek type pickling olive to make available to you.

Pouto Beach Dual Purpose

Tested dual purpose olive **\$28**

Pouto Large Pickling

Super large greek type pickling olive. **\$28**

ALMONDS

Te Kaha Seedling

Aka Monavale. A hard shelled, excellent quality nut, large tree and a heavy cropper.

For most of us hard shelled almonds are far more reliable than thin shelled ones. **\$18**

APRICOTS

Rootstock options:

Peach: Do particularly well in light, dry boney soils. Produce larger trees than Marianna.

Pahi

Good texture and flavour. Reliable cropper in Northland, self-fertile. Our wood came from an old tree in Paparua, but it had

previously been collected by Mr. Cliff from a paddock on an original settler's farm near Pahi. **\$28**

Rootstocks: Peach

NECTARINES

Rootstock options:

Peach: Do particularly well in light, dry boney soils. Produce larger trees than Marianna.

Marianna Plum: Prefer heavier, moist soils. Excellent semi dwarfing, and non-suckering.

Goldmine

A medium sized, mid season, white fleshed nectarine with red over green skin. Dessert quality with a sweet flavour. An outstanding old variety from the Kaipara. **\$28**

Rootstocks: Peach, Marianna

Ruakituri Seedling

A Goldmine type nectarine from the Ruakituri area. **\$18**

Pouto Gold

Sweet, juicy, old fashioned small, gold fleshed fruit with red on green skin when ripe. Outstanding old variety from Logan Forrest's front garden at Pouto. It is one of the old gold nectarines that were common in that area 100 years ago. **\$28**

Rootstocks: Peach, Marianna

PEACHES

It was very interesting to read in 'Eating on the Wild Side' by Jo Robinson, that white fleshed peaches are the most nutritious. You can actually tell that when you eat them, amazing, isn't it? They are our old peaches. My guess is that all the peaches like Blackboy and Arapahoe with red in their flesh are also super nutritious.

Rootstock options:

Peach: Do particularly well in light, dry boney soils. Produce larger trees than Marianna.

Marianna Plum: Prefer heavier, moist soils. Excellent semi dwarfing, and non-suckering.

Arapahoe

This variety has red skin, golden flesh and freestone with red streaks around the stone. It has an outstanding flavour, excellent texture and is very juicy. It is an outstanding Dalmation cultivar and originally came from Ruawai. Red leaves on the tree. **\$28**

Rootstocks: Peach, Marianna

Batley

Firm, honey coloured skin and flesh when ripe, tender and sweet, wonderful texture and flavour, clingstone, dessert. From the historic house at Batley on the Kaipara. Outstanding peach, reliable cropper and disease resistant. Ripens March April. **\$28**

Rootstocks: Peach, Marianna

Blackboy Seedling

These are old favourites around the North, particularly good for drying and bottling because of their flavour and freestone qualities. Also great as a dessert peach when fully ripe; they have thick furry skins like all old peaches and amazing dark blood red streaky flesh. Ripens February March. **\$18**

Christina

A small-medium size peach, very similar to the River peach, but slightly firmer and sweeter, freestone. Good for bottling, jam and wine. Reliable heavy cropper. Ex Matakoho, Phil Hodges. White flesh. Ripens early February. **\$28**

Rootstocks: Peach, Marianna

Also available as Seedling \$18

Greens Special

A large, freestone, yellow fleshed peach with a red tinge when ripe in late March. Gifted to the collection by Maureen Green whose brother-in-law David relates this story: "My father Fred Green bought two Golden Beauty and two Campbell Seedling trees from Woodyear Smith's nursery at Matakana in 1940. They used to ripen in early February, both freestone and great to eat or preserve. A seedling grew from one tree, also freestone and ripened in late March. We used to eat peaches from this tree at the cowshed and throw the stones over the rail, and eventually a tree grew from one of those stones. We called it 'Green's Seedling'." **\$28**

Rootstocks: Peach, Marianna

Jim Armstrong Black Seedling

Jim sent us this peach from an island in the Bay of Plenty, because of its history. It is from the final settlement of the Maori prophet and warrior of Ringatu fame Te Kooti. It is a classic early NZ peach similar to the River peaches of the Kaipara Harbour, ripening a little later. White flesh, red around the stone, freestone, pink blush on the skin when ripe in early February. **\$18**

Mamie Ross

We're so excited to be able to make this peach available again to you all. It came from Mavis Smith's Totara House collection, and the original tree is still alive on the front lawn (very unusual for a peach to live 100 years). Mamie Ross peaches were listed in the early nursery catalogues in NZ in the 1800s and are outstanding white/green skinned and white fleshed peaches. They ripen early, after Mary's Xmas, in late December/early January. They are super juicy, melt in the mouth, unlike anything available commercially today. **\$28**

Rootstocks: Peach, Marianna

Mary's Xmas

Large, juicy, with outstanding white flesh. Healthy tree. Fantastic Christmas peach! Ex Kaipara Harbour, from original orchard planted 1800's by missionary White. **\$28**

Rootstocks: Peach, Marianna

Orion

Very early flowering and ripening peach ripe from late November - early Dec. Small white fleshed peach, red blush, extremely heavy, reliable cropper, fruit often needs thinning to avoid breaking branches, free-stone. Ex Kumeu. **\$28**

Rootstocks: Peach, Marianna

Peacherine Matakoho

An outstanding new addition to our collection. This tree came from an old orchard still being well maintained in the Matakoho area. It's a sweet melting buttery yellow fleshed fruit, ripe February. **\$28**

Rootstocks: Peach, Marianna

Also available as Seedling \$18

Peacherine Rose Street Seedling

An old tree, planted on public land in Wairoa, sweet, soft, white flesh peach. **\$18**

River

River Peaches are the ones that set me off on this whole journey. They are disease resistant, easy to grow and grow true to seed. They are prolific croppers of sweet medium sized, green skin with a red blush, white fleshed, free stone fruit. Ripen late January. **\$28**

Rootstocks: Marianna

Also available as Seedling \$18

Te Ataarangi White Seedling

Large, soft, white flesh peach, free stone, the start of our Hawkes Bay collection **\$18**



PEARS

Rootstock options:

Quince BA29: produces a dwarf pear tree and prefers moist conditions.

Quince C: the best rootstock for very small espaliered / cordoned trees.

Bert's William Bon Cretian

An outstanding selection of William Bon Cretian. Superior flavour, ripe early Feb. Good dessert and bottling. Bert had many Bon Cretians, this one grew and tasted different. **\$28**

1 year rods on: Quince BA29

Kieffer

Large, yellow, russety skin, crisp, sweet, juicy, firm, excellent keeper. Ex Wellsford, Bert Davies. Pollinator: Seckles. Ripens late March. **\$28**

1 year rods on: Quince BA29

Seckles

Pollinator of all other pears that need pollinators. Excellent small sweet fruit - the old "honey" pear of Bohemia. Ripe end of February through March. Self-fertile so does not need a pollinator. If you've only got room for one pear tree this is it! The bees love it too. **\$28**

1 year rods on: Quince BA29, Quince C

Also available as a branched 2nd year tree on: Quince BA29 **\$36**

Triumph de Vienna

Excellent dessert pear. Ripe March, after Bon Cretian. One of the very best pears for flavour and texture, large brown russet. This was Bert's favourite pear (he made pear sandwiches with this one.) **\$28**

1 year rods on: Quince C

Winter Cole

Late season very sweet and flavourful variety for winter eating (they store well in a cool place once picked). Small, brown russeted skin. Ex Auckland. **\$28**

1 year rods on: Quince BA29

Winter Nellis

Great late eating pear and an excellent keeper, similar to Winter Cole with brown rusted skin and very sweet. Great pollinator for most other pears. **\$28**

1 year rods on: Quince BA29



PLUMS

Rootstock options:

Peach: Do particularly well in light, dry boney soils. Produce larger trees than Marianna.

Marianna Plum: Prefer heavier, moist soils. Excellent semi dwarfing, and non-suckering.

Myrobalum: Works particularly well for European plums. Semi dwarfing, prefers heavy soils and tolerates wet feet.

Angelina Burdett

Old English plum. Soft, very sweet dessert, purple skin, yellow flesh. From the collection of Tom & Robyn Morrison, Red Bluffs Nursery, Warkworth. Over 150 years in Northland. Ripens February. Pollinator: Greengage. **\$28**

Rootstocks: Peach

Ahipara Prune

Old English plum. A very special plum I found growing in a long abandoned orchard on the Ahipara Gumfields many years ago. We think it is the old Victoria plum that many people ask for. A large egg shaped classic looking prune, ripens earlier than all the others, in January. Dark red skin, yellow very sweet sugary flesh and free stone. An excellent plum for dessert and cooking. Pollinator: Angelina Burdett / Self Fertile. **\$28**

Rootstocks: Myrobalum

Black Prince

Old European plum. Large, dark red, meaty flesh, purple/green skin, freestone, excellent taste. Pick over long period, keeps well. Ripe Feb/Mar. From an old French orchard in the Hokianga. Heavy cropper. Partially self-fertile, pollinator plums help. **\$28**

Rootstocks: Peach

Dan's Early

Early Japanese plum. Large, yellow flesh, red skin, great texture and flavour. Heavy cropper. Large spreading tree, the best quality early plum around. Partially self fertile. Originally from Dan Hansen. **\$28**

Rootstocks: Peach, Marianna

Herds Cutting

This is a compact hedgerow plum tree well suited to a hedge and acts as a great pollinator for most plums in your orchard. **\$18**

Little John

Japanese plum. An outstanding large plum with dark red skin and red meaty flesh, sweet, super full of flavour, juicy, tends to fruit bi-annually. It ripens just after Tamaki Special and fruit best with other Japanese type plums around or pollinator plums. **\$28**

Rootstocks: Peach

Marabella

Old European plum. Our most reliable, heaviest cropping plum. It came to us from Jim and June Cox and to them from a family whose ancestors had picked it up when their boat stopped in South Africa. It is a well known South African plum. It is a small plum, red skin, yellow flesh and is an OK dessert plum but it is an outstanding cooking plum. with an almond flavour and no bitterness at all. We love them for breakfast. Self fertile. Crop heavily every year and ripens late December. **\$28**

Rootstocks: Peach, Marianna

Maungamuka Golden Drop

Old European plum. Delicious yellow green soft fleshed plum with transparent skin for dessert. It came from the schoolgrounds at Maungamuka. Self fertile, ripens January. **\$28**

Rootstocks: Marianna

Red Spotty aka Marahemo Prune

Old European plum. A small very sweet red spotty skinned prune, with yellow flesh. Outstanding flavour, excellent plum. This plum was delivered to us by a very elderly couple many years ago. The original tree was at Marahemo, on the Kaipara Harbour. **\$28**

Rootstocks: Peach

Scarletina

Red skin and flesh, outstanding flavour and colour. Great for dessert, jam and bottling. An ex commercial Australian plum, it came to us from Matakohē. Self fertile, ripens Mid January. **\$28**

Rootstocks: Peach, Marianna

Sugar Prune

Old European plum from the Morrison collection, which has come from the original White Bluffs Warkworth collection from the early 1900's. Naturalised and fruits well in the North. Very sweet, freestone, red skin, yellow meaty flesh. **\$28**

Rootstocks: Peach

Tamaki Special

Japanese plum. This is an outstanding plum, from the collection of the late Dan Hansen of Wilderland fame. Dan was an amazing gardener and collected many fruit trees whose value he saw. This is one of the best (Dan's Early is another). It is a large, dark red meaty plum which is full of flavour and very sweet, great for dessert and bottling. It is always a vigorous growing tree. Ripens late December. Pollinator: Duff's Early Jewel, and others. **\$28**

Rootstocks: Peach

Whakapirau Gold aka Yellow O'Gem

Old European plum. Yellow flesh and skin, large, sweet, juicy melting. Ex Kaipara Harbour, well known by the old locals on Whakapirau Beach, huge crops in January. Large spreading tree, good health. **\$28**

Rootstocks: Marianna

ROSES**White Cemetery**

This is an old fashioned bush rose, that was given to Kay by Mrs Chadwick of Paparoa (as an old woman in the 1980's). She told me that she was given it by her mother who said that it was a common rose

around all the old cemeteries of Northland. It is a highly fragrant white quartered rose with a little pink blush around the edges. It blooms profusely once each November and is very easy to manage and keep healthy. It is a great hedgerow or garden rose. **\$12**



FRUIT TREE

Pests and Diseases

EVERY YEAR WE HAVE PEOPLE EMAILING US WITH PICTURES OF EITHER PESTS OR DISEASES ON THEIR FRUIT TREES AND ASKING US WHAT THE PROBLEM IS AND WHAT THEY CAN DO ABOUT IT.

The most common problems are:

1. PEAR SLUG, usually in November/December as water stress hits. Looks as though a gross black slug is eating layers off the leaves, leaving just the lacy veins.
2. SILVERLEAF, which appears on the first flush of growth in Spring, disappears again until late Autumn and then appears again. Silvery leaves.
3. BRONZE BEETLE damage (holes in leaves eaten at night most often but also in the day time). Infestations occur by bronze ladybird-like insects, which live in long grass and attack trees in times of water stress mostly in November/December.
4. LEAF ROLLER, usually on apples in Summer. Leaves on new growth are rolled right up with caterpillars inside the roll, which eat the leaves as they hatch.
5. CICADA damage, zip like marks on the bark of main stems and branches that are actually the places cicadas lay their eggs. These hatch into larvae which eat the cambium layer of tree, and weaken the tree in that place, also in times of water stress, the worse the stress, the worse the damage.
6. BACTERIAL BLAST, lesions on the trunks and branches of stone fruit where gooey sap oozes.
7. CURLY LEAF, bubbly leaves usually occurring on the first flush of growth in Spring, most often disappearing with second flush, usually mild but occasionally serious.
8. DIE BACK, where the tips die back sometimes, with the tree not getting bigger in the first year after planting. Usually occurs because the tree was not pruned before planting, and it was not planted with enough care and/or not watered well enough, also water stress.

GENETICS AND ENVIRONMENT

Over the years I have come to understand that tree health is just like my health, is just like my chicken's health etc. Health is determined by genetic strength, and environment.

That means we need to plant heritage fruit trees. Heritage trees are the only trees we have that were selected and grown to be strong and healthy and high brix without chemical industrial inputs... they have the best genetic strength, so long as we are careful about the selection process.

On top of that we must supply them with the minerals they need as well as the right amounts of air in the soil (50% ideally) and also the correct amount of soil moisture to avoid root stress and to enable the trees to pick up the minerals at all.

If we don't do any one of these things pests or disease issues will undoubtedly result at some point in some form.

My suggestions are:

1. Follow our suggested tree planting guide on the website. The air, the minerals, and the moisture are all critical.
2. Only plant what you can take care of well. One tree well taken care of will produce more fruit than 10 trees that do not get their needs met.

3. If you didn't do that, get advice as to the best way to achieve a similar result. It may mean you have to feed your trees well each year with *EF Soil Force* or *EF Nature's Garden*, get a Reams soil test etc. Find a way to water over summer. Foliar feed in the short term.

4. And lastly there are short term ways to deal with the symptoms of stress, i.e. pests and diseases. My current favourite is spraying our *EF BioPesticide* which is entirely composed of beneficial microbes, which helps create an environment that supports the trees, keeping bugs and diseases at bay. It will heal silver leaf, curly leaf, and everything else, so long as you also pay attention to the moisture levels and the minerals, the air levels and possibly the drainage. There is also neem oil and several other acceptable options, see our website.

5. Check out our website for all fertilisers and soil tests mentioned.

www.koanga.org.nz



THE KOANGA INSTITUTE

FOREST GARDEN

AS WE ARE DEVELOPING OUR FOREST GARDEN TO SUPPLY OUR NURSERY WITH PLANT MATERIAL, TO PROVIDE NEW ZEALANDERS WITH KOANGA'S HERITAGE FRUIT COLLECTION, AND WE THOUGHT IT A GOOD IDEA TO SHARE THE PROCESS WE ARE GOING THROUGH.

DEFINITION OF FOREST GARDENS

In a Forest Garden a diverse range of vines, trees, bushes, shrubs, and ground covers (there are 7 recognised layers in forests) are planted specifically to create a diverse (the more diverse the more stable the outcome) and integrated (the more integrated the more stable the outcome) system that will require little input from outside, will regenerate the soil, and grow high quality fruit, chicken/poultry feed, mushrooms, firewood, garden stakes, etc.

In permaculture orchards we often use the ground cover as the sole medium to create diversity and nutrient maintenance... it now seems as though it actually takes all 7 layers of the forest to maintain nutrients in the nutrient cycle.

Basically the idea is that the nutrients, the minerals that give life to growth, are constantly being grabbed by the humus, microbes and tree roots in the soil, and travel to and are de-

posited in the leaves of our trees during the photosynthesis process. From there the leaves drop to the ground and decompose or are decomposed by the myriad of decomposers there to do the trick, and are grabbed by the humus/carbon in the soil and made available again to come back up into the trees. The more layers of roots in the ground, the more diversity there is of root species, the more likely the minerals will be grabbed by the microbes, the humus and then the tree roots and returned to the biomass above the ground.

The minerals are also highly soluble even once deposited in tree leaves and can wash out and back to the ground in rain and mist, so the more layers of leaves there are to halt the fall, pick up and absorb the minerals, the longer it takes for them to reach the ground, the more likely they will be held in the cycle. The more layers of leaves above ground the more stable the system, the more layers of roots below ground the more stable

the system... the more diverse the range of plants is, the more we are likely to be able to provide the right minerals in the right relationships that each tree needs to reach its potential. Each species has certain minerals it accumulates, each species has its part to play in providing for another species' needs.

The 7 layers are:

- Medium to large canopy trees (over about 10m high). In small forest gardens this canopy may not exist, or only a few trees of this height that are coppiced perhaps
- Small trees and large shrubs (4-9 m high)
- Shrubs (up to 3m)
- Herbaceous perennials and evergreen plants (up to 3m)
- Groundcover plants and creepers
- Climbers
- Underground (root crops)

Essentially the more diverse and the 'wilder' our system is the less energy it will take to maintain, the more resilient, the higher the diversity, the higher the potential for interconnectedness, the lower the maintenance requirements, the lower the greenhouse emissions. The more cultivated our systems are the more energy they take to maintain.

OUR FOREST GARDEN

Three years ago, the Koanga Institute moved to this beautiful place outside of Wairoa, and as part of the process of saving our heritage fruit trees we are creating a Forest Garden to hold these trees, within a regenerative ecology that provides us with plant material for the nursery. This gives us the possibility of running comparative trials with rootstocks, comparing varieties etc., plus food for our personnel etc. This Forest Garden is also a key part of a research project as well as a key part of our education program

We have identified the different micro-climates and soils, and are progressively planting the fruiting trees according to their needs. We had no choice but to put the fruit trees in first, rather than plant the support trees first, so we're creating a process that makes this work!

There are several techniques for establishing a forest garden, most of them are going through a process of killing the grass, making it easier to plant the lower layers of the forest. Our forest garden area is big and we are not going to kill all the grass, it would be too labour intensive, it will come back anyhow, and we believe that we are not going to lose anything by leaving it there. We have decided that our Chinese Weeder geese, and Muscovy ducks will help us manage the grass within the space, while the canopy and lower tree layers are being

established. Once these come up and grow strong the grass will go weak, and the environment becomes perfect for chickens and for the next layers of planting – shrubs, and specific herbs and ground covers, that will survive poultry. We see the inclusion of poultry in this Forest Garden as key elements in a system designed to provide high quality food for people, where fat-soluble vitamins, high levels of minerals and traditional fats and oils are key to maintaining our health and our DNA.

We are now collecting seeds, and other plant material, beginning to build up a collection of support trees

for the forest garden that will work here in our climate. We have planted a large number of nitrogen-fixing, cold tolerant, water tolerant (high water table) trees, and at the moment we are going through a process of germinating a wide range of forest garden beneficial plant seeds. These will be grown for the first year in the nursery and then will be planted and tested in the forest garden. The plan is to extend the range, test, and have available to the public, seeds and plant material from those that we find work, all grown organically here in NZ. ✨

*Shaked From
Forest Garden/ Nursery Manager*

CONNECTING FOOD FORESTS

As part of many visionar's attempt to develop food forests all around New Zealand, a 3 day food forest hui was held in Auckland at the end of September 2013. People from all over New Zealand came together in order to share, join arms, and move New Zealand food forests forward. A lot of information was shared, but more than that, we met and connected, created communication systems, and started work groups to keep on moving after the hui.

At the moment Koanga is involved with many others in creating a food forest plant database, to be open source living system, online, to share with anyone who is interested in starting a food forest in their community. This involves a lot of work and will be available as soon as we manage to put all of the info together and transform it to a wiki-based database.

There is also an effort to map all existing food forests, please visit <http://foodforest.co.nz/mapping-new-zealands-food-forests/> if you are developing one.

For more info about the hui and other food forest action visit:

<http://foodforest.co.nz/>

Big thanks to the hui organisers, James Samuel & others, for making this happen!

COMMUNITY FOREST GARDENS ON PUBLIC LAND

WE HAVE WRITTEN BEFORE ABOUT WHAT FOREST GARDENS ARE, WE CAN DEEPLY UNDERSTAND HOW IMPORTANT THESE CAN BE FOR OUR WORLD, ENVIRONMENT, SOCIAL STRUCTURES, AND OBVIOUSLY DOWN TO OUR COMMUNITIES.

If we own a small, to a very large, piece of land, we can already start to develop and strengthen our personal resilience, maybe support some of our neighbours. If we want to work towards a more resilient community, then we can start thinking in that size.

Andy Cambeis has created a document "Manual for creating a community Food Forest on public land" available to read and use online, simply google 'Manual Food Forest'.

I will go through the principles using the document itself. I have left out practical forest garden implementation techniques as I wanted to focus on the invisible structure part of this work.

Shaked From

INTRODUCTION

Imagine a forest full of food, free to harvest for everyone.

This manual will assist you with the process of getting access to public land and establishing a community Food Forest on it. A community Food For-

est on public land is not a "one man" project and you will need to be able to motivate other people in your community to actively support you.

GET IN TOUCH WITH YOUR LOCAL COMMUNITY ASSOCIATION

Tell them about your project, make a nice presentation, prepare handouts, stress that a charitable trust will hold the responsibility for the land, that it will be permanent, and that you need and want their verbal support for the project. Give them a while to think and debate about the idea, and then approach again to see if you can obtain their support.

FORM A CHARITABLE TRUST

You need a governing body to get a license for public land. Use the "society based incorporated trust", as this will be the most suitable for the situation.

Now you will need several steps in order to form the trust: find 5 trustees, make a deed, ask IRD for a

tax number, register the trust at the Charities Commission, open a bank account for the charitable trust, ask the IRD for exemption from Resident Withholding Tax. (More info in the original manual)

FUNDING

As creating such a wonderful project for the community doesn't all need to come out of your own pockets, you should approach the council, local/national funding programs that might fit the project, and so on.

Getting the community on your side and working together might bring the funds in with time.

CHOOSE LAND

Choose an area of public land that is managed by the local council.

The right choice of public land is vital to the project.

A Food Forest is a long term project, taking 10-20 years to reach peak productivity and usually existing way beyond the lifespan of any individual or initiating group. Because of this, it needs to be protected and immune from short term interests such as fast money earnings from grazing leases, farming leases, complete clearings for firewood or sale for settlements.

Well-chosen public land is the best place for a Food Forest. Public land, in contrast to private land, is not usually affected by ownership change or changes of policy that follows a change of ownership.

The future Food Forest area should not be in middle of the town. The Food Forest could not grow enough in the middle of the town if there is a high demand for more Food Forest area. It should also not be too far away from the town border, so people can reach the Food Forest with a bike. I propose a maximum of 20km from the town border.

The ideal place of a Food Forest would be:

- Not in the direction of planned growth of settlement or other development (ask the local council for the community development plan)
- Enough space to grow in the future. (Think about 10-50 ha)
- Not more than 20 km away from the target community.
- A street close to the area.
- Formerly farmed land without grass.
- A wind shelter belt already established.

Not many people will have a piece of land in their community that meets all criteria, these are sorted by importance, the most important on top.

The initial Food Forest lease area size is also very important. It must be between 700m² and 9999m² (99m x 100m), If the initial size is larger, the local council can't issue a lease for the area for \$1 per year.

The local community association should be able to assist with this process.

MAKE A 50 YEAR PLAN

Local Councils usually like to see a 50 year plan, with visions and evidence of implementation planning. Some stakeholders may also like to see your plans. You don't need to put much detail in your plan. A graphical plan of possible future development of the area together with a vision of the future of the Food Forest and the reassurance that the charitable trust will care about the area in the future is adequate.

STAKEHOLDERS

All stakeholders need to at least tolerate the Food Forest project. Nobody likes problems coming from a new project. It is your job to assure all stakeholders that the Food Forest is no threat or inconvenience to them.

Prepare nice handouts, and visit them at home. When meeting stakeholders, have two people present from the Food Forest project, as this makes it hard to dispute any agreements you might make. Stress how a stakeholder might benefit most from the Food Forest. Document carefully in writing every agreement with every stakeholder.

PROPOSE TO THE LOCAL COUNCIL

Make an appointment for a personal presentation of your project with an open minded council member. Be well prepared. Don't take too much of their time. Ask for their consideration of your proposal. Leave them with some

handouts. This will start the internal discussion about the project within the Council.

PUBLIC ATTENTION

You will need to prove public awareness, interest and involvement in your project. If you can do this, the council will not refuse to allow your access to the public land. At the end, the council has to act in the interest and the benefit of their community.

Produce a nice looking flyer with all essential information of your project first. You can place this flyer on all sorts of notice boards (physical and online) and give it to interested people.

Set up a social media website, Facebook or if you have a Facebook page allergy, a Google site or a Wordpress site should do the job.

You need the website statistics, count every participant of public presentations of your project, create an opportunity for provable engagement of the community.

I set up a wind shelterbelt tree seed distribution system. I asked people to raise trees from seed for the project. People had to leave an email address or phone to receive the free seeds (raise one for us, keep one for yourself). This way I could prove how many people were actively supporting the project.

Don't worry too much about a low number of people. 30 proven active supporters in a 5,000 person town is

MUCH more than most other community projects can point to.

Again, support from the local community association make things easier. Ask them about open-minded journalists in a local newspaper office. If you're lucky local journalists might come to you and ask for an interview for an article in the local newspaper. If you're less lucky, write a newspaper article and offer the article to a local journalist for free. Make clear that you are fine with publishing the article in the name of the journalist. A nice free article about a beneficial community project is very hard to reject.

ASK THE LOCAL COUNCIL FOR A FINAL DECISION

ALL points, except the funding, need to be done before you go back to the council for a final decision about your local Food Forest project on public land. Provide the Council with printed copy of:

- Your project proposal. (Stress that the Charitable Trust is responsible for maintenance)
- The documentation showing support, or at least tolerance, from all stakeholders
- Your 50-year plan
- Proof of public awareness, interest and involvement

If all points are done, it is very likely that you will get the license for the public land granted. You should ask the council for a long term "LICENCE

TO OCCUPY" for the land you have identified for the Food Forest. It could happen that you only get a 5 years license period with undertaking for more after checking your intentions/credentials. That's OK as long you get commitment for 25+ years after your "probationary period".

You also ask the council for an exemption from the set up fees. This is important otherwise they will charge you for these.

THE LICENSE

Check your license draft carefully!

These licenses are usually made for farmers and will be full of unnecessary and impeding rules. You need to negotiate until all unnecessary and impeding regulations like i.e. no signs on the land, or no storage of any kind of tools are removed.

DON'T sign a stupid license!

Congratulations, you are ready to start working on the land!!!!

Bring the community together, and create your community's forest garden!! ✨

Edited with permission from Andy Cambeis.

See foodforest.co.nz for more information.

LEMON TREE DESIGN

PART OF OUR URBAN GARDEN HERE AT KOANGA IS THE OLD LEMON TREE. THE DESIGN PROCESS FOR THIS SECTION OF THE GARDEN IS INCOMPLETE, AND THE NEED TO FINISH THIS PROJECT RECENTLY BECAME QUITE URGENT.

We were watching the bees enjoy a feast of citrus nectar and pollen a few weeks ago when we noticed some pesky aphids and white flies gorging themselves on lemon tree sap... Obviously a tree too weak to defend itself is in serious need of an immunity boost, which led us to the need to begin a design process for the lemon tree section to meet its health and nutritional needs. Well, that and the fact that we just needed to get in gear and finish this section!

STEP 1 - GOALS

So, although this section is small, we still use the design steps of the forest garden design process. We begin with listing our goals. The most important goals we have are:

- 1) To create an appropriate Mediterranean guild for the lemon tree – basically appropriate companion plants that meet the nutrient demands of the lemon tree to improve its health and productivity,

- 2) Supply a source of food for the rabbits and chickens in the Urban Garden, which in turn return compost and vermicast (rabbit poo - worm farm - vermicast),
- 3) Add more sources of nutrient dense food for the kitchen,
- 4) Increase bee forage.

STEP 2 - DEFINITION

Next we need to define and measure the area of this section.

Our area is a rectangle 4m x 3m for a surface area of 12m².

STEP 3 - CANOPY SIZE

Ensure the canopy area of your heavy feeding trees make up no more than 60% of the total area available.

Canopy size is determined by multiplying $3.14 \times R^2$ where R is the radius of the tree.

In this case the canopy area of the lemon tree is 7m², just under 60% of the canopy area... lucky us!!!

STEP 4 - CHARACTERISTICS

Assess the characteristics of the system. The primary characteristics are full sun, good drainage, daily foot traffic (which means constant attention), a Mediterranean climate, and some wind protection from a building on the south side.

STEP 5 - NUTRITION

Understand how to meet your heavy feeders' nutritional needs. To meet the nutritional needs of a Forest Garden, orchard or even just a single fruit tree, which is the case in our lemon tree design, it is essential to design the nutritional needs into the system itself to ensure a sustainable and regenerative system, as well as healthy and productive trees.

The initial key nutrients required in the design process for fruit and nut trees are *nitrogen* and *potash*.

We then multiply the lemon tree's canopy area of 7m^2 by 0.8 (for heavy cropping trees) to determine the total area of nitrogen-fixing plants needed (to ensure our lemon has its needs for nitrogen met) which is 5.65m^2 or rounded up is 5.7m^2 .

Next, we need to know the total area of potash supplying plants – comfrey is the best source for this. With comfrey, you need 1 plant for every m^2 of canopy for heavy feeders (which is the lemon tree), so since the canopy area of the lemon tree is 7m^2 we need 7 comfrey plants.

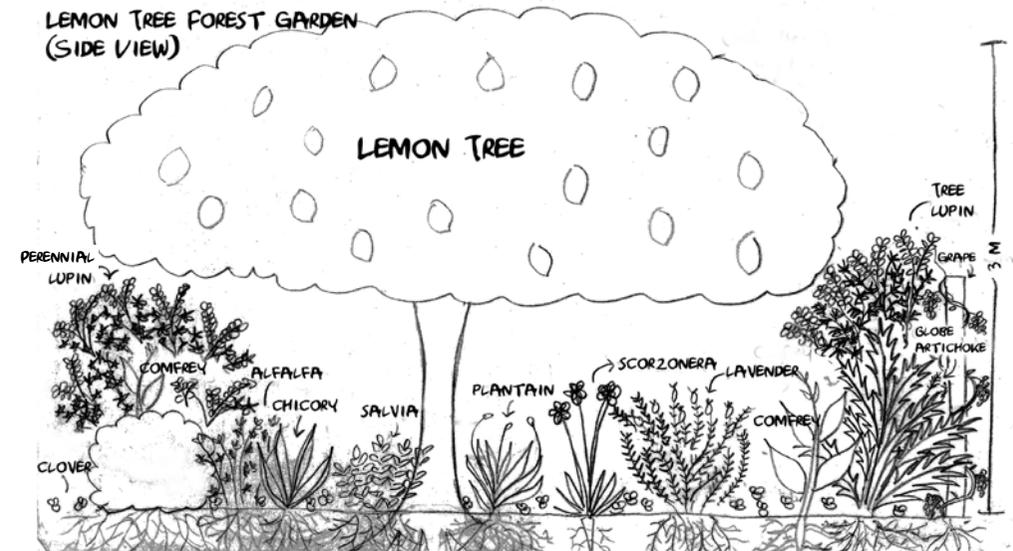
So, let's review. The numbers break down like this: Total surface area of section to be designed = 12m^2 ; total canopy area of lemon tree canopy = 7m^2 ; total area of nitrogen fixing plants needed = 5.7m^2 ; total comfrey plants to supply potash = 7. Since the nitrogen fixing plants take up 5.7m^2 of surface area and the 7 comfrey plants take up roughly 1m^2 , when we subtract these from our total surface area of 12m^2 we're left with 5.3m^2 of remaining plantable area around the lemon tree.

Now that we have met the lemon tree's nitrogen and potash needs, we can select appropriate plants for the lemon tree, from the set of possible plants in the Mediterranean guild, covering as many of the 7 layers as possible in this small area, and as diverse a range of plants as possible to maximise the health and resilience of the garden. These same plants will also accomplish our other goals listed earlier.

You can see which species we chose in the accompanying diagram opposite. After making our selections, we just need to put in a little hard work, sweat, smile and be satisfied. Then we can enjoy our efforts and watch our system be happy! ✱

Cody Kerr
Forest Garden Apprentice

If you're more interested in the design details, then you should definitely join us for one of our **Forest Garden Design workshops** here at the Koanga Institute, which will leave you with the confidence you need to implement your own designs properly. See page 8 for more information.



MEDITERRANEAN GUILD

Heavy feeders/heavy croppers: citrus, grapes, almonds, peaches, olives

Heavy croppers/low demand feeders: figs, carob

Root crops (mineral accumulators): scorzonera

Groundcovers (mineral accumulators): alfalfa, clover, marjoram, thyme, oregano

Deep Rooting herbaceous plants (mineral accumulators): plantain, chicory, echium

Perennial woody herbs/shrubs (mineral accumulators): lavender, rosemary, artemesias, cardoon, salvias, caper bushes, Globe artichokes, tree lupins

Shrubs and bushes (all legumes): Tagsaste, Tree Medic, Acacia spp, Siberian Pea Tree

Vines (all legumes): Lab lab bean, wisteria, snail vine

Ordering Information for our BACK ORDER COLLECTION

This is an exciting collection of plants that are sent out as live plant material, not as seeds. Orders can be placed at any time of year but are sent out once per year, according to the plants' needs - the best time to plant them. Orders received during the year are kept on file until the send out, and are processed according to the date they are received.

Items will be sent out around the time indicated for that category although specific timing varies from season to season. If you have special requirements (for example will be away during part of the send out period) please let us know in advance as we are not able to contact customers to check before sending the items out.

These items are offered subject to availability. It is hard to anticipate both harvest and demand and we will endeavour to meet all orders to the best of our ability. Occasionally, either due to increased demand or a reduced harvest, we cannot meet some orders and will supply either a substitute, credit note or refund, or offer to carry the order over to the following year.

If the item you ordered is not available we may substitute with the most similar item available. **If you do not want substitutes then please indicate this, alternatively if you want particular items as substitutes then record that.** If ordering using the catalogue form then please write on the form or attach a note. If ordering online please put this information in the "Order Comments" line.

For the more perishable items (e.g. kumara, artichokes etc.) we send out email notification that the item is on its way so please supply an email address if you can.

If you have a back order query which does not relate to ordering or payment then please email gail@koanga.org.nz

For full descriptions please see the July 2013 Koanga Institute catalogue or look on the website <http://koanga.org.nz/products/back-order/>

KOANGA INSTITUTE BACK ORDERS 2014

Complete the form below, enter the total on main order form, or send by itself with payment to Koanga Institute, RD 5 Wairoa 4195.

NAME: _____
 POSTAL ADDRESS: _____
 COURIER ADDRESS: _____
 EMAIL: _____ PHONE (DAY): _____ FAX: _____

CREDIT CARD #: _____
 EXPIRES: _____ CARD TYPE: _____
 NAME ON CARD: _____

BULBS		
Order by 30 Jan 2015/ Delivery Feb 2015		
	Qty:	Total:
Coates Family Bulb Collection \$20		
Freight: 1 item: \$5 / 2 items: \$7 3 or more: \$8.50 (add \$2.80 if RD)		
Subtotal:		

GARLIC/ONIONS/STRAWBERRIES		
Order by 30 Mar / Delivery Apr/May 2014		
	Qty:	Total:
Society Garlic \$8		
Multiplying Leeks \$8		
Multiplying Spring Onions/Giant Chives \$8		
Mike's Multiplying Spring Onions \$8		
Garlic Rocombole Early White \$8		
Garlic Rocombole Early Red \$8		
Garlic Rocombole Late \$8		
Garlic Takahue Red \$8		
Garlic Takahue Red Lrg Pack (~ 500g) \$25		
Tree Onions Gerald De Koning \$8		
Strawberry Captain Cook (5 plants) \$10		
Strawberry Early Tioga (5 plants) \$10		
Strawberry Marguerite (5 plants) \$10		
Freight: 1 item: \$4 / 2 or 3 items: \$6 4 or more: \$8.50		
Subtotal:		

POTATOES		
Order by 30 May / Delivery from June 2014		
	Qty:	Total:
Gladstone per kg \$11		
Karoro per kg \$11		
Kowiniwini per kg \$11		
La Ratte per kg \$11		
Maori per kg \$11		
Matariki per kg \$11		
Paraketia per kg \$11		
Scots per kg \$11		
Stewart Island per kg \$11		
Taranaki per kg \$11		
Urenika per kg \$11		
Uwhi per kg \$11		
Whataroa per kg \$11		
Freight: 1kg: \$5 / 2kg: \$7 4 kg: North Isl. \$8.50 (add \$2.80 if RD) South Island \$13.20		
Subtotal:		

ARTICHOKE/COMFREY ETC.		
Order by 30 Aug / Delivery from Sep 2014		
	Qty:	Total:
Chinese Waterchestnuts \$18		
Chinese Artichokes \$8		
Comfrey \$10		
Jerusalem Artichokes \$8		
Nana's Yams \$6		
Rainbow Mix Yams \$6		
White Alpine Strawberries \$12		
Red Alpine Strawberries \$12		
Whitianga Bay Gladioli \$5		
Yacon \$8		
Freight: 1 item: \$4 / 2 items: \$6 3 or more: \$9 / add \$2.80 for RD		
Subtotal:		

KUMARA		
Order by 30 Oct / Delivery from Nov 2014		
\$12 for 15 plants of 1 variety (No mixed bundles!)		
	Qty:	Total:
Candy		
Hawaiian Blue		
Honey Red		
Huti Huti		
Mahina		
Maikio Gold		
Maikio Red		
Paraparapara		
Paukena		
Reka Rawa		
Romanawa		
Taputini		
Freight: Up to 3 items: \$7 4 or more: \$9 / add \$2.80 for RD		
Subtotal:		

TOTAL (incl. freight): _____
 Please add freight for each section, as each is sent out at a different time of year. Thank you.
 See our website or the July catalogue for full descriptions.
 For office use only - Date received: _____



YAMS (OXALIS TUBEROSA)

The brightly coloured tubers that we know as Yams here in New Zealand are called Oca in other parts of the world. They form a low sprawling bushy plant which is perennial but is grown in NZ as an annual with the tubers harvested in late autumn / early winter. We have two lines of Yams in the Koanga collection. **Nana's Yams** are dark pink and came to us from the Thames area where they have been grown for a long time. This makes them quite special for those of us in the north, because yams normally require colder winters. These yams do very well in cold winters but also ok in the warmer areas.

The others are the **Rainbow Mix Yams**, a colourful mix of red, pink and yellow, which came from Henry Harrington who was an amazing old gardener and seed saver from Southland and, several years ago, gifted his seed collection, including his yams, to Koanga. Because they are from the South they are not so adapted to do well in the northern part of NZ.

My experience growing yams in Northland has been interesting. In Kaiwaka we grew bumper crops of Nana's Yams without much difficulty. The major problem we experienced there was remembering to net them before the pheasants or our ducks found them! Now that I'm further north I've been experiencing more difficulties. Its definitely hotter here in the Hokianga and the yams struggle – at times they grow big bushy tops but then the main stem rots and the plants just die. I've read that this is a bacterial disease in the sappy stem that occurs in high heat, high moisture situations. Whether this is the case I'm not sure

but they certainly don't seem to like the intense heat we experience here.

Conventional wisdom is that they need full sun to crop well but I've been experimenting growing them either as an understorey crop or shaded by tall crops such as maize or jerusalem artichokes. So far the results have been promising. We had a reasonable crop sown under widely spaced sweetcorn and an excellent crop shaded by a bed of amaranth. Last year we misjudged the placement, they ended up in full sun and we got nothing. Luckily we had a few growing on the edge of a bed of rhubarb which gave us enough for seed.

This year we're experimenting again with both Nana's Yams and Rainbow Mix ones. We've got some partially shaded by maize, some under shade cloth at present which will be shaded by Jerusalem artichokes once these get bigger, and some underplanted among the dahlias. As a gardener I try to choose things that grow well where I am and produce a good yield rather than get a poor yield of something that really doesn't suit my location. Kaiwaka isn't that far south of here though and because we got such good crops there I'm keen to persevere to see if I can get them to produce well here. For those in the lower North Island and the South Island though they should be a relatively easy crop to grow.

In terms of use my understanding is that they get sweeter if left in the sunshine for a day or so after harvesting, and that roasting them, some people say with a little honey for extra sweetness, can't be beaten. ✱ *Gail Aiken*

Special thanks also to all of our Life Members listed below:

Peter Alexander
Diana & Justin Anderson
Banyan
Barbara Barangawath
ME Bedford
Bedford Mackay Family Trust
Rachel Benjamin
John Billing
Nick Blennerhasset
Helen Boyd-Alspach
Richard Burgess
Donna Campbell
Liz Campbell
Brian Cartmell
Barbara Chapple
Gwenda Costello
Scott Dalziell
Emma Darke
Karyn Davis
Bryony de Boer
Robyn Diamond
Cherry E Dibley
Inge Diks
Sabine Drueckler & Wolfgang Hiepe
Robyn Dyer
Mavson & KA Early
Angela Emery
Suze Erskine
Brett Fallen
Faye Fausett
Dene Fowler
Noeline Gannaway
Monika Geister

Simon Griffiths & Stacy Shuck
John Griggs
Jo Hainsworth
Rob Hammington
B.T. Hammond
Jacquie Hardinge
Henry Harrington
Raewyn Harris
Emma Horgan
Barry Hutchings
Murray Joyce
Kahukiri Bloodstock
Elizabeth Keet
Jenni Kent
R Kent
Jennifer Kerr
Susan King
Fred Kingdon-Sanders
Wendy Klink
Jude Knights
Pat Knuckey
Heike Koester
Susan Lane
Pauline MacDonald
Jan Mackenzie
Bill & Josee McClure
Tania McLean
Chris Morrison
Jo Munro
Annette Nixon
Richard Noke
MD & AJ Nuttall
Heidi & Logan O'Callahan
Lesly O'Callahan

Viola Palmer
Craig & Dorothy Palmer-Thompson
Jane Penberthy
Phoenix Organics
Jenny Quilliam
CE (Betty) Rawley
Amy Roberts
Carla Roberts
Daphne Ross
Jane Russell
Robyn Scanlan
Dick & Bertha Schoneveld
Roy Shackleton
Pam Shand
Yvonne Shanks
Donna Stirling
Chas Symes
Jenny Tait
Lisa Talbot
Elaine Taylor
Grace & Iohangawai Te Pahi
Phyllis Tichinin
Randall Tutton & Richard Bell
Chris & Julene Wake
Yannick Wakelam
Dave Webster
Morley West
Yvonne & Jim Wheeler
Tania Williams
Alison Wilson
Ritz Wood
Richard Worthington



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