

# Permaculture Cairns Newsletter

EMPOWERING COMMUNITIES WITH SUSTAINABLE SOLUTIONS



**Care for the Earth, Care for people, Fair share the excess**

Permaculture Cairns Incorporated    Web Site: [www.permaculturecairns.org.au](http://www.permaculturecairns.org.au)

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## FEBRUARY NEWSLETTER

### PERMACULTURE CAIRNS MEETING

Tuesday 21st February 6pm for a 6.30 start

**ARC Disability Centre 92 Little Street Manunda**

Members free, but bring some nibbles for the cuppa break  
and a dollar for the raffle, which helps pay for the venue.

Non members \$5

#### AGENDA

Welcome to new members and visitors

Upcoming workshops and events

Permaculture Principle Number 2, a practical explanation.

Guest Speakers:

**Grahame West from “Seaweed enterprises Australia”**

Learn all about using seaweed in your garden to feed your soil and create food abundance.  
and

**Joel Webb from “The Source Bulk Foods Cairns “**

will be teaching us a better way to shop for our food staples.

Book of the Month, Plant of the Month, Tip of the Month and more....

and if anyone has something to add please do before we go for a cuppa and nibbles.

**Meeting close and now we enjoy a snack with a cuppa, now is a good time to mingle  
amongst friends**

**All finished by 8.45pm.**

## *Permaculture Principle No. 2 Catch and store energy – “Make hay while the sun shines”*

By developing systems that collect resources when they are abundant, we can use them in times of need.

This icon for this design principle represents energy being stored in a container for use later on, while the proverb “make hay while the sun shines” reminds us that we have a limited time to catch and store energy.

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### *Growing Food in February in The Wet Tropics*

*Eggplant, cucumbers, corn and beans growing well. But the best plants have been the tropical perennial vegetables. Plenty of greens with Amaranth- green and red leaf, Ceylon spinach Kang Kong, Brazilian spinach, Sambung and Okinawa spinach, Tree lettuce, Lebanese cress all doing fine. As are the Sweet potato, Cocoyam, Taro, galangal, turmeric, ginger and pumpkin.*

*Principle No. 2 Store the masses of green material now to make compost.*

#### *GOT WEEDS Try these*

*Plants cannot grow without sunlight, so cover them up -.*

*Lay down a couple of layers of newspaper over the weeds then cover with mulch, when weeds have died, bed can then be turned into a garden and mulched.*

*Use weed control matting, lay some mulch on top. This is a good method for walkways.as weeds are blown by the wind and carried in on shoes.*

*Pull weeds before they set seed. After three years, there are very few weeds. Take the scissors and cut the seed heads off those you have missed.*

*Don't waste the nutrients in the weeds, soak them in a bucket of water (it will smell) for a few weeks, then use the diluted water to fertilise the garden.*

*Kill baby weeds with a spray of 50/50 Vinegar and Water.*

*Solarisation: This method works well on a large area - first water the area well, then cover with clear plastic (UV resistant). The edges of the plastic need to be weighted down all around or dug into the soil. Leave for 6 weeks during hot weather. The temperature will be sufficient to kill any plants and any seeds.*

*That sun burns fast so watch out while you are gardening by Carol laing*

# Growing and Cooking Tropical Edibles

Saturday 4th March  
9am-12:30

\$20

92 Little Street, Manunda (ARC Disability Services)

Learn how to grow and cook tropical plants with Clare Richards,  
author of the FNQ' household staple, 'Tropical Cuisine'



Register E: [workshops@permaculturecairns.org.au](mailto:workshops@permaculturecairns.org.au) Ph: 0435 120 944

**PERMACULTURE CAIRNS**  
BUILDING RESILIENT COMMUNITIES WORKSHOPS

Sponsored by



# *Permaculture Cairns Workshop*

Monday 6<sup>th</sup> March 9am to 1pm

## **Grow Your Own Nutrient Dense Food**

Presenter: Carol Laing

### **In this workshop we will cover:**

How to do a soil pH test and a simple test to gain some knowledge of your soil structure

Explain the importance of increasing organic matter in the soil

Compost making: home compost bin, compost heaps and Bokashi

Beneficial plants to grow for improving soil,

How to prepare a soil test for a soil analysis laboratory,

Why we need to re-mineralise the soil

Fertilizers to use if you are not doing a soil test

Explain the importance of the difference between lime, dolomite, and gypsum;

What to be careful of when adding materials to your soil

Tropical perennial vegetables.

*"Feed the soil not the plant" - a permaculture practice*

Pests and diseases will be almost non-existent because your nutrient rich plants are no longer attractive to insects.

All workshops will be conducted with Permaculture Ethics, Principles and Practices in mind.

**Workshops will be held on a permaculture property in the Cairns city area, where many tropical vegetables and fruits are grown. Numbers are limited.**

**COST: \$30 includes morning tea, workshop notes, seeds and a fertiliser sample**

**Interested? contact me Carol Laing at – [newsletter@permaculturecairns.org.au](mailto:newsletter@permaculturecairns.org.au)**

My experience: during the 10yrs I owned and operated a plant nursery I completed by correspondence a Horticulture Certificate Course 1983, a two weeks Permaculture Design Certificate Course 1992, Microbe Course and Chromatography Course with Mas humas 2012, Elaine Ingham's online Microscope Course' 2013, Graeme Sait's 4 day Nutri tech Solutions, Certificate in Nutrition Farming 2014, and while attending National Biological Farming Conference 2016 I attended David Hardwick's Workshop on Soils. I also attended workshops on Soils with Terrain, Northern Resource Management and FNQ Biodynamics. I have an extensive library on many subjects, but mostly on how to grow food well using the microbes in the soil.

## *Things You Can Try At Home*

This is a new section on practical ideas for everyday things such as this first article from Treehugger on **Popping grains**. There will be quick everyday recipes on using perennial tropical vegetables from your garden, how to make yoghurt cheese to turn into healthy dips, how to make fruit leather, see what I mean?? And if you think of something people might like to try send the

info to [newsletter@permaculturecairns.org.au](mailto:newsletter@permaculturecairns.org.au).

## POPPING GRAINS

It's actually much easier than popcorn – no oil is required and you don't need to cover the pot. I used a regular heavy saucepan on medium-high heat. Let the pan get quite hot, just before smoking – enough that a drop of water sizzles and quickly evaporates. Toss in the grains; no more than a single layer with room. Shake the pan so they don't burn, and toast away. Some sizzle and crack and that's all, some actually split and poof. I took each of mine off the heat when they stopped crackling, before they got too dark to avoid the bitterness of over-toasting. None of them took more than two minutes.

**Pearl barley:** Raw pearl barley is very hard but popped, it's toasty and nutty and soft but with some chewy texture. It's really good! ones that cracked definitely transformed.

**Quinoa:** Toasted and popped it's wonderful. It didn't exactly "pop" like corn, but it expanded slightly and crackled and jumped around exuberantly. It is toasty and crunchy with deep flavour.

**Arborio rice:** Puffed Arborio is wonderful!. Since it's white and already has the hull, bran and germ removed there isn't that much flavour, but the texture is lovely and it will provide a great texture as a garnish.

**Short-grain brown rice:** The texture is completely transformed and it tastes like rice cakes.

**Buckwheat:** Buckwheat turned into miniature little popcorn kernels. And although it looks like barely-popped popcorn, it tastes fully popped with a wonderful texture that is crunchy and tender. They will be great to add crunch to salads and pop to grain dishes; they'll be cute on soup and good in yogurt and perfect in granola.

## Donna's roast pumpkin recipe

Donna brought this wonderful pumpkin dish to a meeting recently and many commented on it at the time – so here is the recipe.

1/2 pumpkin deseeded, cut into 8 wedges  
100 ml olive oil  
2 tsp cinnamon  
black pepper  
1 cup natural yoghurt  
juice of 1/2 lemon  
4 tbsp pine nuts  
1 red chilli  
6 springs coriander  
lemon wedges to serve

1. Heat oven to 200 degrees centigrade. Mix pumpkin, oil, cinnamon, and pepper and toss pumpkin in mixture.
2. Roast 25-30 min
3. Place on a platter, drizzle with yoghurt and lemon juice, and top with nuts, chili, and coriander. Serve with lemons

# PIP MAGAZINE

## Media Release: Pip Magazine Celebrates 7th Issue!

Pip, the Australian permaculture magazine is celebrating the release of its seventh issue this month and its increase in production from two to three issues. “We felt that two issues wasn’t quite enough. After a few months, people were getting hungry for more. So as of 2017 we will be releasing three issues a year, March, July and November.”

Issue seven will be hitting subscriber letter boxes, newsagents and retail outlets mid February.

“We're really excited to have reached issue seven, from our humble beginnings with a Pozible campaign three years ago. We're now in newsagents and retail outlets around Australia and New Zealand and shipping worldwide,” said founding publisher and editor Robyn Rosenfeldt. “The latest issue is packed with articles on all things related to the chicken, including our beautiful chicken on the cover. We also have features on natural dyeing, growing garlic for year round supply, pickling, fermenting, electric cars and more. We also have a special tribute to Bill Mollison, the father of permaculture who passed away late last year.”

“We love having a diverse mix of perspectives on permaculture in practice in the mag. This issue we have articles on vegan permaculture and homeschooling.” said Robyn. “There's no 'one way' to do permaculture, and it's a growing movement with lots of exciting new ideas coming from different places. Our goal is to share these and connect the permaculture movement in Australia and beyond.”

“We're passionate about bringing the Australian-grown permaculture movement to a wider audience locally, which is why I started the magazine,” she said. “In 2017 we're going from strength to strength with our increase in production and distribution and the launch of our podcast series.”

*About Pip Magazine:*

*Pip Magazine started as a crowd-funding venture in 2014, and in just three years has grown into a thrice yearly magazine reaching more than 18,000 readers worldwide.*

[www.pipmagazine.com.au](http://www.pipmagazine.com.au)

## Whats'on and What's Coming Up FNQ Community Exchange – Lets Local Energy Trading System Calendar For February 2017

KOAH – Saturday 4<sup>th</sup> 9am – 1pm Monthly Market and Trade at Koah Community Hall. You are invited to be part of the local Koah Monthly Market, an excellent family friendly venue. This is a traditional cash market however LETS members are welcome to participate and trade, 5B per stall, set up from 8am. Event Host: Tonielle – 0422058995

ATHERTON – Saturday 4<sup>th</sup> 6 – 8pm Atherton Trade Evening - Choko Theme, 17 Evans Street. Choko's for every course NB if you google “Chayote” you will find plenty to choose from. This event also celebrates the official opening of the Atherton LETS stall. Event Host: Irene - 0439914876

CASSOWARY COAST - Sunday 5<sup>th</sup> 9 – 3pm Johnstone River Community Garden Pink Picnic, supporting Arbour Day. Flying Fish Point Rd, Innisfail. Garden Harvest Lunch. This is not a LETS event. Event Host: Bernie - 0403523244

MALANDA – Sunday 5<sup>th</sup> 10am – 12pm Trade in the Park, Eacham Memorial Park, opp. the post office. Bring along morning tea to share, something to trade and display your wares. There is a shelter, so it's an all-weather event. Family friendly with playground next to it. BYO chair. Be there or be square! Event Host: Katrin - 40966755 or 0417822446

MALANDA – Saturday 11<sup>th</sup> 6pm – 9pm Trade Night & Shared Asian Dinner. 33 Park Ave. Trade starts at 6pm followed by a shared dinner at 7pm. Bring Instruments if you feel like busking for Bartles or simply come for a chat and socialize. This is a family friendly event and kids can make use of the huge toy room. Event Host: Katrin - 40966755 or 0417822446

Peeramon – Sunday 19<sup>th</sup> 10am Indigo Dye Workshop, Anderson Road. Patti is cranking up the indigo vat again! Bring your own (washed but dry) white cotton/linen/hemp fabric or clothing. 20 Bartles for workshop + \$20 per kilo of dry fabric. A great opportunity to rejuvenate those tired T-shirts and bed sheets! Or make fabulous gifts. RSVP & further address details contact. Event Host: Patti Flynn – 0439561266

RAVENSHOE – Kathy is having a well earned break from hosting trade days. If you can offer support in hosting Ravenshoe Trade events please feel free. It can be a lot of fun – all you need is a regular place and time. All events can be promoted via this calendar which is also on the webpage and on FB. Details are needed by the 15<sup>th</sup> of each month. Contact Melitta directly 40952340 for more info about how to promote your event

CASSOWAY COAST – Sunday 19<sup>th</sup> 11am – 3pm LETS Trade. Bring Lunch to share (BBQ available), items to trade, information on services offered and some good conversation as well. Please consider BYO plate & cutlery to save our host excessive dish duties. Car pooling recommended when making the trip from the tablelands. (\*Weather permitting). Event Host: Bernie – 0403523244

YUNGABURRA – Sunday 26<sup>th</sup> 12 - 2pm The Red Sheds Trade Afternoon. This event is the day after the Yungaburra Markets. Bring along something to trade a rug to display your wares. *That retro cafe* is offering 100% Bartles for drinks from the menu, you will need cash for lunch and drinks from the display fridge. *On the Verandah* is offering preloved clothing for 100% Bartles. We are now setting up at the back of the Red Sheds in and around the courtyard. Event Host: Melitta - 40952340

CAIRNS CITY – Sunday 26<sup>th</sup> 12- 2pm - Lafew Teahouse, 33 Sheridan Street. At Lafew we provide a prime position opposite Rusty's Market. We offer: kombucha, tea and coffee, available for 50/50 Bartles/\$. Bring your trading sheets and goodies. For new members - please drop by and chat to the LETS traders, you can sign up on the day. Event Host: Lorna – 0475762838

Peeramon – Monday 27<sup>th</sup> 10am Indigo Dye Workshop, Anderson Road. Patti is cranking up the indigo vat again! Bring your own (washed but dry) white cotton/linen/hemp fabric or clothing. 20 Bartles for workshop + \$20 per kilo of dry fabric. A great opportunity to rejuvenate those tired T-shirts and bed sheets! Or make fabulous gifts. RSVP & further address details contact. Event Host: Patti Flynn - 0439561266

What to bring to Trade Events where not specified above: food & drinks for yourself or to share, or money and/or Bartles at some venues, friends, Trading Record Sheet and pen, any goods you wish to trade, table/rug to display them upon is often useful, your own chair at some venues, promotional material of any services you are offering if applicable, \$20 to join LETS if you are not yet a member.

fnqes@gmail.com – 40966972 – www.fnqces.org – [www.communityexchange.net.au](http://www.communityexchange.net.au)  
[www.fnqces.org](http://www.fnqces.org) [www.communityexchange.net.au](http://www.communityexchange.net.au)

## **Biodynamics FNQ Events Calendar 2017**

**March 5th Sunday - 10am-3.30pm**

Biodynamic Basics for Beginners – About the BD Preps, compost,  
Seaweed Tea, stirring 500.

Bring chairs and food to share for lunch

Ravenshoe Community Centre, Ascham Rd, Ravenshoe

**April 9th Sunday - 10am – 3.30pm**

Working with the Biodynamic Calendar.

Plus garden discussion with Michael and Lindy Alba, Mareeba

Bring chairs and food to share

**May 14th Sunday -10-3.30pm**

Horn Burial and AGM

Collins Farm, 709 Kaban Rd, Kaban

Bring chairs and food to share for lunch.

**June 11th Sunday - 10am-3.30pm**

Life in the Soil: Soil Food Web and

Chromatography and Microscopy

Patrick English Pavilion Malanda Showground

Bring food to share

**July 9th Sunday - 10am-3.30pm**

Biodynamic Cattle and Pasture Management

Julatten TBC

Bring chairs and food to share for lunch

**August 13th Sunday - 10am-3.30pm**

Biodynamic Home Gardening in the Tropics

Cairns Redlynch

Bring chairs and food

**September 10th Sunday - 10am-3.30pm**

Horn Lifting and discussion on making & using Biochar

Collins Farm 709 Kaban Rd, Kaban

Bring chairs and food

**19th November Sunday - 10am-3.30pm**

Minerals and Trace Elements – bringing them into Biodynamic Soils

Kenneth Keough , Toumoulin Rd, Kaban.

Bring chairs and food to share for lunch

**Enquiries : Simon Harden 07 40977837 Cheryl Kemp 4095 1119.**

## Tesla kills the duck with big batteries – from Treehugger.com



Lloyd Alter (@lloydalter)

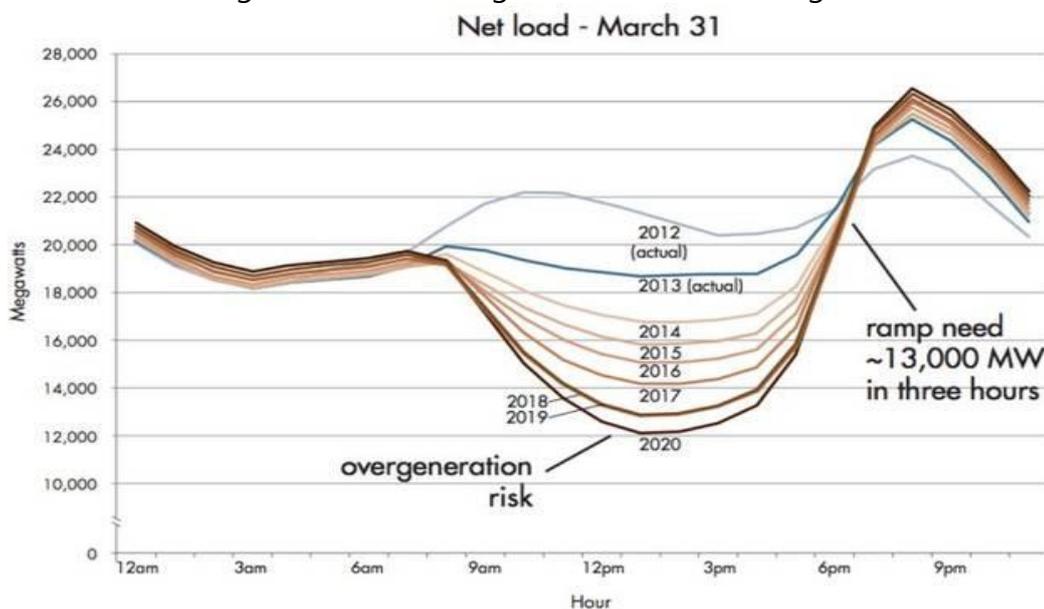
Energy / Energy Policy

January 31, 2017



© Tesla

One of the problems that comes from reliance on solar power is the “duck curve” where the solar panels produce more power than is needed during the day, and standby power is needed in the evening when demand is high and the sun goes down. The common solution has been to turn on natural gas “peaker” plants to produce power when the needed in those few hours. But in Southern California, a big natural gas leak turned into what **Melissa called an epic ecological disaster**, sending utilities searching for an alternative to gas.



© If it looks like a duck ...

(Photo: California ISO)

One of those alternatives that people dreamed about just a few years ago was giant batteries, and Elon Musk promised that he would make them in his new Nevada factory. What is really astonishing is that in just three months, Tesla has delivered a giant battery farm with 396 stacks of batteries that can provide enough electricity to power 15,000 houses for four hours, about how long it takes to shave the peaks, to kill the duck.

Even the experts are shocked at the speed this is happening at: According to **the New York Times**,

"I had relatively limited expectations for the battery industry in advance of 2020," said Michael J. Picker, president of the California Public Utilities Commission. "I thought that it would not really accelerate and begin to penetrate the electric grid or the transportation world for a while to come. Once again, technology is clearly moving faster than we can regulate."

Natural gas peaker plants are expensive and controversial; you want them near the user, but the NIMBYs come out in force. Battery packs are much simpler, they are modular and they are scalable. According to Tesla Chief Technology Officer **J.B. Straubel in Bloomberg**,

"There were teams working out there 24 hours a day, living in construction trailers and doing the commissioning work at two in the morning," Straubel said. "It feels like the kind of pace that we need to change the world."

MIT Technology Review's **Jamie Condliffe** is a bit of a skeptic, noting that lithium batteries are expensive and that they degrade.

Tesla doesn't say how many cycles that the batteries in its Powerpack systems, which make up the installation, can tolerate before they degrade and reach the end of their useful life. But like other lithium-ion batteries, it's likely in the thousands—probably around 5,000, the same as its Powerwall units. That's not bad in a domestic setting, but could be quickly devoured in a grid setting.

Others do not think this is too much of a problem, that battery prices will keep dropping, and that they will keep getting better.



This TreeHugger has been forced to eat a lot of words recently after complaining how net zero building and rooftop solar was going to create huge problems; **I noted recently that Tesla's power wall** "is a real game-changer, that erases **so many of the problems I have had with rooftop solar** and its dependence on the grid, the whole duck curve thing, just gone."

Now that they can replace expensive and controversial peaker plants with battery packs, the game changes again in favour of solar and wind. Straubel of Tesla is right- this will change the world.

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## **Ninth-grader invents renewable energy device powered by the sun, wind and rain – from Treehugger.com**



Ninth grader Maanasa Mendu was watching the movement of tree branches during a storm when inspiration struck. To her, the branches looked like piezoelectric materials, devices that produce electricity from vibrations and she began to imagine a renewable energy technology that could harness the energy in the wind and rain.

After research, months of design and an initial idea to focus only on wind power, she ultimately built a prototype that can harness solar and wind energy and the vibrations of rain drops. The device consists of three solar "leaves" that act as solar panels but also move and bend with the wind and rain.

"If my device just relies on one specific environmental condition, the power output can vary throughout the day," **Mendu said**. "Whereas if it relies on multiple environmental conditions—like sunlight intensity, wind speed, precipitation—all of these factors could create a more stable power source with a higher power output."

The design just won her the grand prize in the **Discovery Education 3M Young Scientist Challenge** and \$25,000. To enter the contest, she built a prototype using recycled materials for only \$5 (seen above). After charging it was able to power a 15-watt light bulb for eight hours. The addition of more "leaves" would increase the output.

As part of the challenge she worked with a mentor from 3M to evolve the idea and design.

Mendu now plans on further developing the design and trying different configurations in order to increase the device's efficiency. She hopes that one day soon the technology can be used by people in developing regions around the world where a low-cost clean energy device could make a big difference.

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## Foods rich in resistant starch may benefit health

A new comprehensive review examines the potential health benefits of resistant starch, a form of starch that is not digested in the small intestine and is therefore considered a type of dietary fibre. Some forms of resistant starch occur naturally in foods such as bananas, potatoes, grains, and legumes, and some are produced or modified commercially and incorporated into food products.

There has been increasing research interest in resistant starch, with a large number of human studies published over the last 10 years looking at a variety of different health outcomes such as postprandial glycaemia, satiety, and gut health. The review summarises reported effects and explores the potential mechanisms of action that underpin them. For example, there is consistent evidence that consumption of resistant starch can aid blood sugar control. It has also been suggested that resistant starch can support gut health and enhance satiety via increased production of short chain fatty acids.

"We know that adequate fibre intake -- at least 30 g per day -- is important for achieving a healthy, balanced diet, which reduces the risk of developing a range of chronic diseases. Resistant starch is a type of dietary fibre that increases the production of short chain fatty acids in the gut, and there have been numerous human studies reporting its impact on different health outcomes," said Dr. Stacey Lockyer, co-author of the *Nutrition Bulletin* review. "Whilst findings support positive effects on some markers, further research is needed in most areas to establish whether consuming resistant starch can confer significant benefits that are relevant to the general population; however this is definitely an exciting area of nutritional research for the future."

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## HEALTH services have put a warning out after a number of reported cases of Melioidosis in Far North Queensland



Tropical Public Health Services Director, Dr Richard Gair, said four cases of the soil-borne disease had been confirmed, three cases in the Torres Strait and one in the Cairns area.

They are asking people to avoid unnecessary contact with muddy water which is where the germ is typically found.

“This is a high number in a short period” Dr Gair said.

“The majority of infections occur when skin abrasions or wounds come into contact with wet soil or water contaminated by the bacteria *Burkholderia pseudomallei*,” he said.

“Melioidosis is very uncommon in healthy adults and rarely seen in children however those with certain underlying diseases and conditions like diabetes, chronic lung or kidney disease and cancer are considered highly vulnerable.

“Symptoms of acute Melioidosis include fever, cough and difficulty breathing; the effects can be very severe and almost always result in hospitalisation.

“Sometimes the disease may present as superficial skin infections or abscesses in various part of the body.”

### **Prevention of Melioidosis**

*There is no vaccine to prevent Melioidosis. During the wet season adults, particularly anyone in north Queensland with an underlying medical condition should take the following precautions:*

- Wear protective footwear when outdoors
  - Wear gloves while working in the garden, on the farm etc.
  - Cover abrasions and sores with waterproof dressings
  - Wash thoroughly (preferably shower) after exposure to soil or muddy water, and after working outdoors
  - Diabetics should maintain optimal foot care, with help from a podiatrist if necessary.
- 

## **The glyphosate outrage**

We were told it was the softest of chemicals, however, it is anything but. Here are just some of the findings:

1. **Bioaccumulation**– there is evidence that the chronically ill amongst us will often present with unusually high levels of glyphosate in their blood. Most of us have a measurable quantity of this contaminant in our systems, because it is often found in our most popular food, bread. GM soy crops, which have been modified to withstand the herbicide, are often sprayed three times per season before they make their way into the soy flour that is a core component in most supermarket bread (including many Australian baked items). The Europeans boast that they wisely avoided the growing of GM crops. However, the production of protein crops in Europe has slumped in the face of the massive import of GM soy, as stock-food. They may not directly grow these problem crops, but glyphosate is deeply embedded in the food chain of every meat-eating European.
2. **Reduced nutrient uptake**– ‘we are what we absorb’ and herein lies a problem. Glyphosate kills plants by reducing their capacity to uptake nutrients and it may well do something similar to

us. Glyphosate-induced vitamin deficiency has recently been linked to cancer in children. If this research is credible, then surely we must think again when spraying off wheat crops with glyphosate for more rapid dry down (a practice that has virtually become industry standard in some countries). In Australia, the wheat usually dries down naturally, but glyphosate is sprayed on so-called 'health foods' like mung beans and fava beans to dry them off for harvest. Similarly, we might reconsider the use of this chemical to kill off potato crops (the western world's most popular vegetable) to ease their harvestability. I suspect that some of the conventional potato growers out there may well feel confronted because they do not use glyphosate for this purpose. They actually choose a worse chemical, called paraquat, to finish the crop and simplify their harvest. Google '*paraquat*' and make your own call. It is a strangely apathetic world when consumers sit back and allow this serious contamination of our major food crops with barely a whimper of discontent.

3. **Glyphosate increases the risk of lymphatic cancers**— in one study, contact with this chemical actually doubled the risk of Non-Hodgkin lymphoma. Another study, published in *The International Journal of Environmental Research and Public Health* involved a meta-analysis of 41 different papers. Several farm chemicals were linked to Non-Hodgkin lymphoma, but it was found that there was a direct link between glyphosate and a form of this disease called B-cell lymphoma.
4. **Glyphosate creates digestive chaos**— it is particularly harsh on beneficial gut organisms. The mode of action of this chemical involves the shutdown of the Shikimate pathway. This pathway is integral to all life on the planet. The perpetrators of this chemical have noted that animals do not depend on this pathway, so there is no problem. The fatal flaw in this argument relates to the grim realisation that the 100 trillion organisms that inhabit a healthy digestive tract, do have a Shikimate pathway. The consequent damage to our inner life force has been strongly linked to autism, celiac disease, gluten intolerance and other plague auto-immune issues. There are multiple studies where the use of GM soy as stock food has damaged the digestive tracts of farm animals and chickens.
5. **Links to liver and kidney damage**— Sri Lanka and Ecuador have banned glyphosate following conclusive evidence linking the weedkiller to increases in liver and kidney problems. In 2012, French researcher, Gilles-Éric Séralini, published a damning study called "*Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize*". The damage control spin doctors attacked the research, despite multiple and rigorous peer reviews, and successfully had it withdrawn from publication. Séralini had capably demonstrated that the original short term studies, submitted by Monsanto, were suspect when longer periods were involved. The French researchers found serious issues when the feed study was extended out for two years. The regime involved feeding rats GM maize, featuring glyphosate levels that were lower than that allowable in drinking water. Séralini's team discovered substantial kidney and liver damage associated with this food over a longer period and they also noted a marked increase in tumour development amongst the 'treated' rats. Thankfully, in a victory for real science, the Séralini research has recently been republished.
6. **Direct links to reproductive problems and spontaneous abortion** – Dr Michael Antoniou and his research team demonstrated that low doses of glyphosate cause malformations in animals. They found that there was a four-fold increase in birth defects in one state of Argentina following the introduction of Roundup Ready® crops. Glyphosate and its more persistent metabolite, AMPA, both cause cell death in human umbilical, embryonic and placental cells in dilutions far lower than those used in agriculture.

7. **Glyphosate kills multiple beneficial organisms** thereby compromising farm resilience. In separate studies Schneider, Benamu and Griesinger and their respective associates demonstrated that glyphosate has an adverse effect upon some earthworms and several key IPM insects, including green lacewings, predatory mites, ladybirds and spiders. In fact, it is now understood that glyphosate also impacts a variety of beneficial soil life. It destroys the organisms responsible for delivering manganese and iron into the plant. Two key creatures, mycorrhizal fungi and nitrogen-fixing organisms, are both negatively affected and it also kills an important protective organism called *Pseudomonas fluorescens*. Iron and manganese are critical for plant immunity, as are the exudates of these other damaged organisms. In one study, Professor Don Huber has now linked long-term use of glyphosate to increased likelihood of 40 soil diseases. In my recent visit to Ireland, scientists at a research centre where I was speaking described the 'dead zone' they are monitoring, following long-term use of glyphosate beneath the trees. In orchard situations, this root zone should be the most fertile region on the farm. The tree roots are constantly pumping exudates out to their supportive workforce. You do not need fancy equipment to recognise the mistake here. Just smell the soil in your herbicide zone and you will detect the lack of life.
8. **Widespread environmental contamination**— the French Government claim that the compelling evidence of endocrine disruption associated with glyphosate is equally important as the new WHO findings relative to cancer. The huge concern is that this chemical is everywhere in our environment. It is absurdly destructive and restrictions are essential and long overdue. Glyphosate and its metabolite AMPA were found in 100 per cent of rain samples from agricultural regions of the US. Tank water becomes a liability in this context but the groundwater is not much better. Slack et al report glyphosate residues in surface and groundwater in the US, the UK, China, Germany, Argentina, Spain, the Netherlands, Switzerland, France, Norway and Canada. The countries that have embraced GM are obviously worst placed, because the cash crop is sprayed three times per season with this toxin.

## Time for Action

*It is simply unbelievable that, in the face of such overwhelming evidence, there are members of the scientific community that are still supporting this abomination.*

One can only wonder about their integrity. Professor Don Huber has made available details of over 300 published studies quantifying links between glyphosate and many of the plague degenerative illnesses.

Why do we stand by and allow our councils to spray common areas, our farmers to pollute our food, our billionaires to peddle Roundup Ready® crops across Africa and our politicians to do nothing? We all have family and fears for the next generation and we owe it to them to stand up to be counted. Lobby your officials, mobilise your digital people power and experiment with alternatives if you are a food producer.

At least the tide is turning in some regions. Supermarket chains across Europe are now seizing the initiative and removing the weed killer from their shelves. The EU has recently refused to renew the license for glyphosate so, unless appeals are successful, it will no longer be allowable in that major group of countries. Let's hope that this is just the beginning.

**Be ahead of the game, because changes are inevitable**

Despite the flood of question marks associated with this ubiquitous farm chemical, I am sure there are many no-till farmers who will strive to retain this weed management option. They believe it has revolutionised broad acre farming and they are right. Effective weed management has driven no-till success. There is a widely held belief that no-till would flounder without the glyphosate. However, it is increasingly obvious that, at some point, the call will be made. When this happens, those without a Plan B will undoubtedly struggle. Smart operators are exploring options like competitive cover cropping, mechanical management strategies and the use of crimp rollers in broad acre farming.

There are some changes that will come sooner rather than later. It is no longer acceptable to finish off your potatoes and wheat with a proven environmental and human toxin. Surely we can come up with a desiccant to dry off our cereals and spuds, that does not involve dousing food crops in a known carcinogen.

**Graeme Sait, CEO Nutri-Tech Solutions (NTS)**  
[www.nutri-tech.com.au](http://www.nutri-tech.com.au)  
August 11, 2016

*If anyone has information they would like to share, send me the information in a way that I can copy and paste into the newsletter.*

*Editor, Carol Laing - [newsletter@permaculturecairns.org.au](mailto:newsletter@permaculturecairns.org.au)*

## *Stop Press late additions*

### Seed suppliers- online catalogues

The Seed Collection from \$1 packet, \$2 postage under \$20, free postage orders over \$20  
Seeds2freedom -\$3.50 packet - Free postage-  
Green Harvest prices and postage vary

### Moon Gardening Calendar available from

[www.moongardeningcalendar.com](http://www.moongardeningcalendar.com)

\$15.50 including postage

J & R Scott

P.O. Box 492

Kuranda Qld.4881

Please PRINT – SIGN – SCAN and RETURN by email to  
treasurer@permaculturecairns.org.au.

## Permaculture Cairns

### Membership Form 2017



One year's membership fee - 1 Jan – 31 Dec:

- Household membership \$30     Renewing Member      
 Individual membership    \$20     New Member

Name(s) of all applicant(s) & DOB if under 18yrs):

.....  
.....  
.....

Postal Address: .....

..... Postcode: .....

Phone(s): .....

Email: .....

Signature: .....

Payment may be made at Meetings, at Cairns Penny or Online Direct Deposit to Permaculture Cairns A/c at Cairns Penny in Grafton Street. BSB704-966 A/c No. 100009440 please include your Surname as reference.

If you have a Permaculture Design Certificate could you please complete the following survey.

YOUR NAME:.....

Who was the Course Presenter:.....

When did you do the Course:.....

Where did you do the Course:.....

Permaculture Cairns Public Meetings - All Welcome Every month on the Third Tuesday of month Jan to Nov (Second Tuesday Dec). Doors open 6pm, meeting starts at 6.30pm at: ARC Disability Centre, 92 Little Street, Manunda

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