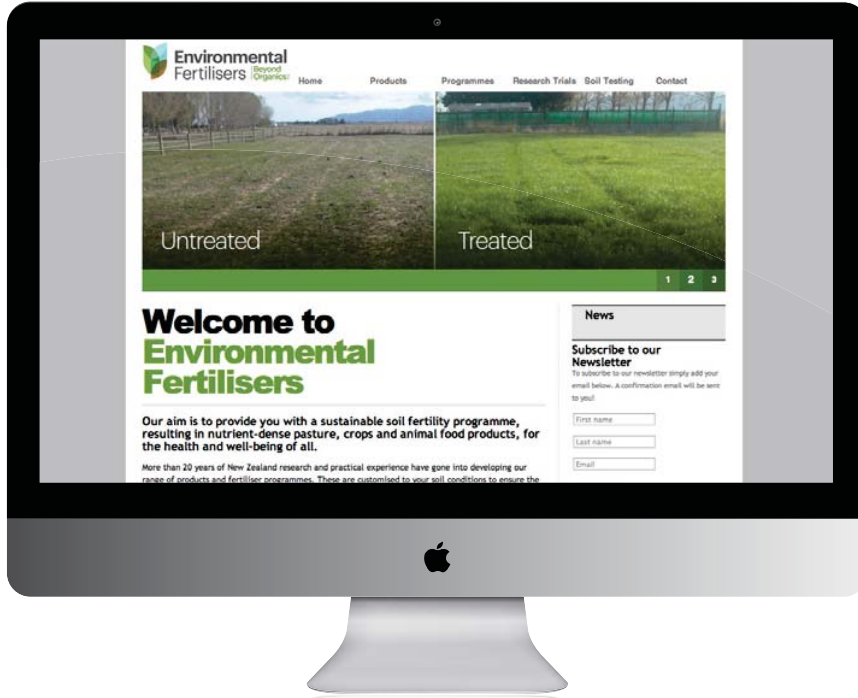


Newsletter

05



Inside this issue:

- Pg 1 New website
- Pg 2 GMO contamination
- Pg 2 GMOs in NZ dairy
- Pg 3 PSA Kiwifruit trials
- Pg 4 Pasture preparation
- Pg 5 Roundup crops Pt 2
- Pg 7 Summer Programme



New EF Website

Check out Environmental Fertilisers new website: www.ef.net.nz. The website has background on the benefits of using Environmental Fertilisers products.

Use the drop down menu's to check out our products. These include information on the nutrients contained, application rates, benefits of using the product and whether they are BioGro certified.

Under 'Soil Testing' drop down menu, you will find information on the Reams soil tests and other soil and plant tests we can organise for you. The Reams soil test is different from other soil tests available in New Zealand in that it provides information on plant availability of nutrients.

Lost your old newsletters from us that had an article you wanted to read

again? You'll find these when you click 'download latest newsletter' - all the past issues are here as well as the latest.

We hope you enjoy the new website and find it helpful.

Merry Xmas from the EF Team!

We will be closed over the Christmas period from the 21st December and will re-open on the 7th January 2013.

The staff of Environmental Fertilisers would like to thank you for your support during 2012 and wish you a happy Christmas and a prosperous and healthy New Year.

Grant Paton, Bibiana, Greg, Joy, Lance, Sue, Grant T, Alan, Rachel, Pieter

**SAVE
50%
ON YOUR
NITROGEN BILL**

**Add EF Humates
@ 5% and reduce your
Nitrogen applications**

GMO contamination in our food chain

Food Safety Australia New Zealand

I have been working hard and questioning our policy makers on obtaining safety data on the already allowed GMO being mixed into our predominantly processed foods to date- none are being labelled as per the LAW.

Kate Wilkinson [Minister of food safety] – assured me [in writing] that these products had been vigorously tested, so then I requested the trial data etc – the response I got from FSANZ was, “we do not have this data and or information available” – so basically Kate Wilkinson lied to me, surprised?!

Environment Waikato

I also requested the soil trial data on how GMO contaminated chicken manure was affecting our soil biology, after all they are meant to be looking after our environment! Well aren't they?

No research is being done even though thousands of tons of this is being spread over our primary production land.

If what is happening at Ruakura Agricultural Centre is anything to go by, this DNA will get into our soil biology's DNA, then enter our waterways and contaminate the Hauraki Gulf seafood industry, rendering a multimillion dollar business value-less overnight.

Ministry for Primary Industries[MPI]

Re: soil contamination – I recently asked what trial research was being done to measure the safety of the GMO contamination from chicken manure and also the GMO animal feed that was being fed into the dairy industry, their reply was “no research has been done and there is nothing planned to be done”.

Looks like big brother [Monsanto/USA] is dictating to us [NZ Government] on how we should look after our Environment and people.

STOP PRESS!

Stop GMOs in New Zealand dairy!



It has been revealed that New Zealand dairy cows are being fed Genetically Modified soy, cotton-seed and maize as supplementary feed that is being imported into the country.

Fonterra says that it needs GM-feed to boost milk production because the nutrition in New Zealand grass is not enough to meet their demands! Well, why not just increase the nutrition in our pastures? Sorry, chemical fertilisers don't allow this!

It's despairing that Fonterra is undermining New Zealand's clean-green reputation for safe food. Fonterra should NOT be allowing farmers to import cheap and dirty feed made from GM crops, which are not wanted elsewhere because of the health risks to animals and humans. Realistically we have become the dumping ground for this stuff.

There is indisputable evidence linking GM crops to infertility and tumours in animals in feeding studies, to the parallel increase human disorders, and to the environmental harm caused by the increased use of toxic herbicide sprays. Read the article on glyphosate and Roundup-ready, genetically-modified crops in this newsletter (part 1 was in the last newsletter). If you care for your family, your grandchildren and society as a whole, you will want

to trust New Zealand milk, meat and cheese to be safe, natural, and GMO-Free. And all other foods produced by, or imported into, this country.

Tell Fonterra to STOP using GMO feed for production of New Zealand milk and cheese and to keep it natural! We don't want NZ to go the way of North and South America with their horrific collateral human damage resulting from the widespread use of GM crops. It's unbelievable that Fonterra is promoting the importation of genetically modified stock feeds into this country. Alien genes and the resulting toxins in our food will end up in our bodies, which were not designed to cope with them.

To protect your health and our reputation for healthy food, go to: https://secure.avaaz.org/en/petition/Stop_GMOs_in_New_Zealand_Dairy and register your displeasure at this introduction of GMO feeds by stealth.

Pasture Preparation for Potential Drought

We have no control over the weather. As summer is upon us, we can start to wonder what sort of weather we will have, dry or wet. Drought is normal and we need to manage for it. The worst thing we can do is just hope that it will rain again soon. Hope is not a strategy for surviving a prolonged drought.



Greg Judy from Missouri, writing in Acres USA, November 2012, has grazed through two summer droughts where they received just 5 inches of rain (125 mm) during the year (in a normal year they receive 38 inches or 950 mm). Part of his success he attributes to combining multiple herds into one mob. This gave them much more control of the recovery period before re-grazing. The next thing he focussed on was reducing the number of animals they were grazing (any sheep or beef that were not performing were sold). They sold early, so sheep and cattle prices were still good. They were left with a third of the animals they started with. This took a lot of grazing pressure off their pasture that was no longer growing.

An alternative could have been to buy hay, however, this would have cost money and you do not know when a drought will end. Any time you make the mistake of feeding through a drought the consequences are not good. In most cases the purchased feed will exceed the value of livestock that you are feeding. You are putting the future of your farm at risk. It is tough to sell animals that you have bred through the years, but you will need to sell some to get through a drought. You can always buy more livestock after the drought with the money you received from selling stock at the beginning. If you try and keep all your animals through a drought, you may lose the farm.

Greg Judy also attributed their success to surviving these droughts through

previous management of the pasture. They had spent five years building up carbon in the soil through mob grazing and keeping an effective working litter bank on the soil surface. They have built up their litter through grazing that is focussed on trampling excess forage. This meant that plants were not severely stressed and every drop of rain was trapped and held in place by the litter bank. There was no bare soil exposed to encourage runoff.

Focus on leaving as much forage as possible in each grazing pass to protect your soils.

Greg Judy did this by using temporary electric fencing that allowed them to ensure that the mob only grazed the upper parts of the plant. He wanted to ensure that they left at least one half of the plant to protect the ground surface from the baking sun (they were having temperatures over 37°C) and drying winds. Leaving higher residual pasture levels means that when it does rain again, the land will catch and hold the water and you will be rewarded with faster grass regrowth simply because you did not grass your pasture down to the level of a bowling green. In grazing this way, Greg Judy's cattle were actually putting on weight during the drought.

Spraying EF Humus Builder onto your pasture will rapidly increase humus levels in the soil by increasing leaf area, photosynthesis, root exudation and

root turnover. Increasing the humus in your soils will increase your soils water-holding capacity (humus can hold four times its weight in water). A soil treated with Humus Builder actually draws more moisture out of the atmosphere. Another benefit is that humus holds nutrients in plant-available form.

Using Humus Builder and other liquid fertilisers (see article on summer fertiliser programme for more on these) will nurture the beneficial soil microbes in our soil and build the level of drought-proofing humus.

Roundup & Roundup-Ready Crops – Silver Bullet or Trojan Horse?

Part 2

Part 2: of a two-part report on Roundup and Roundup-Ready (RR) Crops, presenting further toxicity data. The first part appeared in the Spring Summer 2012 04 newsletter.

A study on rats showed that Roundup is a potent endocrine disruptor and caused disturbances in reproductive development when the exposure was performed during puberty. Adverse effects including delayed puberty and reduced testosterone production at all dose levels, including the lowest observed adverse-effect-level (LOAEL) of 5 mg/kg. Another study on rats showed that Glyphosate-Biocarb (a Brazilian formulation) caused damage to liver cells in a dose-responsive manner, including the LOAEL of 4.87 mg/kg. According to the authors, the findings suggest that the damage to liver cells was irreversible.

In another experiment, Roundup caused total cell death in human umbilical, embryonic, and placental cells within 24 hours. In these experiments, Roundup obtained from the market was diluted 100,000 times – far below the concentrations used when the chemical is sprayed on GM RR crops. The researchers tested Roundup formulations, pure glyphosate, AMPA (glyphosate's main breakdown product), and the adjuvant POEA. They concluded that the presence of adjuvants increases the permeability of human cells to Roundup and amplifies the toxicity of glyphosate. The proprietary mixtures available on the market could cause cell damage and even death at the residual levels to be expected in human food and animal feed derived from glyphosate-treated crops.

Roundup has been linked to sterility and a five-fold higher infant mortality in third generation hamsters fed GM soy. By the third generation most hamsters had lost the ability to reproduce, with slower growth rates and a high mortality rate.



Source: Dr. Don Huber, *What's new in Ag Chemical and Crop Nutrient Interactions, Fluid Journal Spring 2010*

Epidemiological evidence from South America shows a rapid escalation in the rates of human birth defects coinciding with the expansion of GM soy and glyphosate spraying. An epidemiological study in Ontario, Canada also found high levels of premature births and miscarriages in female members of farming families that used pesticides including glyphosate. These studies, along with those of other independent researchers confirm that Roundup or glyphosate is a reproductive and developmental toxin that will particularly affect farmers, farm stock and others exposed to glyphosate residues directly or through what they eat.

All herbicides are toxic to the soil food web. The soil food web is a complex soil ecosystem including beneficial fungi, bacteria, protozoa, nematodes, mites, insects and worms; all are important for building soil structure and humus and providing plants with nutrients and minerals for growth in plant-available forms. The soil is the plant's digestive tract, teeming with beneficial microbes, including those involved in the nitrogen and carbon cycles, providing plant immunity to infection and supplying nutrients and water for plant growth.

For instance, only beneficial fungi capture and retain calcium, vital for plant and microbe growth. Lack of soil fungi results in calcium leaching out of the root zone, making it unavailable for uptake. Phosphorus is solubilised and mined by beneficial fungi for plant use. New Zealand pasture soils are usually low in their ratio of (beneficial) fungal to bacterial species.

Glyphosate and most other herbicides are broad spectrum algacides and fungicides. At least 20% of glyphosate entering plants are excreted from the roots into the soil. In sprayed-out pasture this becomes 100% when the dead pasture is turned under. They kill blue-green algae which photosynthesise, providing a significant energy source for soil microbial activity. They also kill beneficial fungi like mycorrhizae, crucial for storing calcium (Ca), solubilising phosphorus (P), extending root systems, transporting sugar and building humus (vital for storing soil water, housing/feeding microbes and for high yields). All parts of the soil food web are interconnected and interdependent – so the system breaks down with the loss of fungi and algae.

Continued on page 6 >

Roundup & Roundup-Ready Crops – Silver Bullet or Trojan Horse?

Part 2

Continued

IS THE CONVENIENCE OF GLYPHOSATE SPRAYING, AND KNOCKING OUT THE SOIL FOOD WEB, WORTH THE LONG TERM COST?

It gets worse. Glyphosate is a strong metal chelator (google Don Huber and glyphosate research). It binds metal ions and works by chelating minor nutrients like manganese (Mn), zinc (Zn), iron (Fe) and copper (Cu), all crucial for plant immunity to infection. Remove mineral-mediated resistance mechanisms and treated plants succumb to root disease which finishes them off. This results in an explosion of root disease organisms in the soil and increased inoculum pressure, endangering following crops. Could Roundup be implicated in the Psa explosion in kiwifruit?

WHY ALL THE FUSS OVER GENETICALLY MODIFIED (GM) CROPS?

Well, a common genetic modification is the insertion of Bt (*Bacillus thuringiensis*) toxin gene into crops to automatically kill chewing insects that feed on the crop, without loss of crop or need to spray insecticide. Another modification is the insertion of bacterial glyphosate tolerance gene into crops (roundup-ready (RR)) so the crop can be sprayed with glyphosate to kill competing weeds without harming the crop itself.

Sound ingenious? The problem is that unwanted side effects cannot be prevented or even predicted as gene insertion techniques are crude and non-specific, with other genes besides the target gene(s) being affected, with unpredictable results (google 'Seeds of Deception'). Another problem is that, contrary to industry advice, Bt toxin is toxic to humans and animals. In controlled feeding trials GM food is generally shunned by, or kills, laboratory animals fed on it. When we eat such food crops we consume glyphosate or Bt toxin plus whatever alien DNA and proteins the GM crop contains. We also suffer deficiency effects caused by mineral chelation resulting in enzyme deficiency, since trace minerals are vital components of all enzymes.

GM crops have not reduced the need or use of, pesticides; rather they have increased pesticide use over the longer term. Key insect pests have developed resistance to the Bt toxin and GM crops are being increasingly sprayed with other pesticides to counteract this. Crops with glyphosate tolerance are being increasingly sprayed with other herbicides as new weed strains tolerant to glyphosate appear (on an estimated 120 million hectares worldwide). Heavier doses of glyphosate are also required, increasing the glyphosate loading in food crops consumed by humans and animals and in the soil and water supplies. Crop nutritional value is reduced as glyphosate chelates minerals crucial for plant growth and health.

Worse still, a microbe new to science has been discovered which causes sudden death syndrome (SDS) in livestock fed GM feed crops. It first appeared 2 years after the introduction of RR GM soybean, a staple stock feed. The symptoms were infertility and miscarriage in farm animals and poultry which has steadily worsened, to as high as 70% in milking herds. It is strongly linked to GM corn and soybean. It is also occurring in humans, with a dramatic increase in infertility, miscarriages and a mushrooming in numbers of human fertility clinics overseas.

IS GLYPHOSATE WORTH THE RISK AND CAN SOCIETY AFFORD THE LEGACY IT WILL LEAVE FOR FUTURE GENERATIONS? KNOWING THE TOXIC HUMAN EFFECTS, WOULD YOU CONTINUE USING IT ON FOOD CROPS?

The human risk alone is alarming enough, but fertility problems in NZ milking herds may well be related to glyphosate contamination of soil and plants that occurs on most NZ dairy farms. Even without the introduction of GM maize here, grazing cows on glyphosate-sprayed pasture or previously cropped paddocks may well be contributing to cow infertility problems in NZ. This is not scare mongering; it's stating the observable facts, to protect the health

of current and future generations; and it provides a likely answer to the cause of increasing infertility problems in humans and livestock worldwide.

For a summary of Roundup effects go to the following website: www.mindfully.org/Pesticide/Roundup-Glyphosate-Factsheet-Cox

Reminder: the Greeks used a Trojan horse to defeat the city of Troy. Dairy farming and our health could likewise be defeated by the widespread use of glyphosate-based herbicides. The introduction of 2,4-D resistant maize into NZ could be the next assault on our health.

There are ways to reduce the serious effects of Roundup if it must be used:

1. Use a safer form of Roundup (like EF Glyphomate), which reduces the effective dosage per ha by formulating it with a carbon source to stimulate bacterial breakdown of glyphosate in soil, preventing build-up of toxic residues. We don't recommend using glyphosate but if it must be used this is a safer alternative.
2. Apply EF chelated minerals to foliage of crops on glyphosate-treated soil to replace key immune-promoting minor minerals like chelated Mn, Cu, Zn.



Summer programme

PASTURES

Nature drought-proofs the soil by creating humus (long term carbon storage) which deepens topsoil, provides housing and food for beneficial microbes and stores four times its weight in water. Why does a week of dry weather herald drought these days? Because humus levels in our soils have steadily deteriorated to the extent they can now only hold a week's worth of water for pasture growth. Heavy use of urea N, ('cocky's cocaine') depletes humus and increases greenhouse gases, such as carbon dioxide (CO₂). Why can't the authorities acknowledge the fact that healthy pastoral soils sequester massive amounts of CO₂ as carbon, in the form of humus? – a much larger sink than forestry. This sequestration requires the help of beneficial soil microbes, so we must nurture them, with biological agriculture methods, not chemical fertilisers and pesticides which destroy soil environments and microbes. Urea is our chief humus destroyer, and potash (in the potassium chloride (KCl) form) our major killer of beneficial microbes. Further to this, acid based fertilisers acidify soil, reducing the bacterial activity necessary for nutrient cycling.

To combat a decline in water storage capacity, try our Humus Builder Foliar spray, which draws in moisture from the atmosphere, stimulates photosynthesis, root turn-over, sugar exudation from roots and increases microbial growth and carbon sequestration, resulting in improved soil water storage for pasture growth.

Combined with our Vegetative Foliar spray and Soluble Nitro Cal or Calcium Trigger, drought-proof your soil by building humus, attracting atmospheric moisture and feeding pasture directly. Foliar nutrient sprays can be 20X more efficient at feeding plants than soil applied nutrients.

CROP SIDE DRESSINGS AND FOLIARS

Side dress crops with the safe N found in Bio Rocket, and apply Humus Builder / Cal Phos, Vegetative and Bio Char foliars to provide that extra boost of energy for crop growth to fill those cobs.

AVOCADOS AND NUT TREES

To fill those fruit/nuts, talk to our specialists about suitable side dressings and foliars.

KIWIFRUIT

Suppress Psa with EF Psa Brew. Don't try nuking it with copper or streptomycin sprays which only make vines more susceptible to attack by reducing natural immunity. A healthy soil food web confers plant immunity to disease, just like our gut flora does. Environmental Fertilisers offers nutrient programmes that build up vine immunity, the only sustainable way to combat disease. Psa brew offers microbial suppression of Psa

LIFESTYLE BLOCKS

Nurture your soils and yourselves with EF fertiliser programmes.

Check out our new website at www.ef.net.nz for fascinating insights.



Our Goal

To maintain and grow your soil health & productivity, pasture & crop yields & profitability by supplying fertilisers producing mineral-dense feed/food.

Our Motto

Healthy soil, healthy pasture/crops, healthy animals, healthy consumers.



Environmental Fertilisers | Beyond Organics™

1 Railway Street, Paeroa,
Waikato, New Zealand
PO Box 204 Paeroa

P: 0800 867 6737
F: 07 862 8169
E: info@ef.net.nz

www.ef.net.nz