

# NEWSLETTER



DECEMBER 2017



FINALLY... A MUCH  
AWAITED NEWSLETTER

## This is Nuts! Walnut Smashing Guinness World Record

October 2017

An Indian martial arts master has recently won the Guinness World Record title of "Most Walnuts Crushed by Hand" by smashing 212 walnuts in one minute. With all the hard raw walnuts placed in a row on a table, 35-year old Prabhakar Reddy P crushed all of them in one go. The challengers for this title are allowed to wear a fabric glove on their crushing hand. However, the walnuts have to be broken in at least two pieces in order to count towards the final total.

Here's the YouTube video:

<https://www.youtube.com/watch?v=6Rc9dErSicQ>

For full article please refer to source:

<http://www.guinnessworldrecords.com/news/2017/10/martial-arts-master-crushes-212-walnuts-with-his-hand-for-world-record-499466>

### Other nutty Guinness World Records you may wish to crack:

- "Most walnuts cracked against the head" in one minute 181  
- Muhammad Rashid, Italy April 2016
- "Most walnuts smashed with a nunchaku" (ie. a Japanese weapon) in one minute 97  
- Mujtaba Hassan Mughal, Pakistan June 2015
- "Most walnuts crushed by sitting down" (ie. using your buttocks) in 30 seconds 108  
- Cherry Yoshitake, Japan January 2013

## NZWIG PARTICIPATES IN INTERNATIONAL WALNUT GENETIC DIVERSITY PROJECT

Article by Heather North

NZWIG has organised the collection of walnut leaf samples in New Zealand for contribution to a project assessing the genetic diversity of walnut (*Juglans regia*) cultivars and seedlings from around the world. We were contacted by Dr Kouros Vahdati, a walnut researcher in Iran who has previously visited us in New Zealand. He has a PhD student who is currently working at the University of California, Davis, doing the genetic analysis. They have already assessed samples from Iran and USA and wanted to expand the project to include samples from other countries.

Information about genetic diversity would be useful for anyone breeding new varieties. It is probably not likely that we would ever embark on a breeding programme here in the sense of hand-pollinating to achieve specific,

known crosses), so may not have a use for the data ourselves. However we chose to participate in order to make a contribution to the international walnut community and put New Zealand 'on the map'. It's also helpful to maintain relationships with walnut researchers from around the world.

We are grateful for the help of Associate Professor Geoffrey Savage at Lincoln University who is freeze-drying the New Zealand leaf samples ready for shipment to California. Nick Nelson Parker collected leaf samples from 30 different cultivars and selections in his trial block and orchard in the Bay of Plenty. Geoffrey Savage and Heather North collected samples from 25 varieties in the Lincoln University trial block, and Heather collected a further 8 samples at Lightfoot Walnuts and neighbouring properties. We have GPS-ed the trees so that we could go back to them if needed, and have recorded data about each tree in a spreadsheet to send to the researchers. The final samples are now being freeze-dried and we will send them all to California within the next week or so.

## ORGANIC PRODUCTION SYSTEMS

*Field Day (February 11, 2017) follow-up Article by Dave Malcolm*

Earlier this year NZWIG members attended a field day at Basil and Trudi Meyer's orchard located near Charing Cross. The focus for the afternoon was to learn about growing walnuts organically. Basil and Trudi's orchard is not certified organic, but they follow many organic principles.

Basil and Trudi bought their 20-hectare orchard in 2009 with 600 existing trees on 9 hectares. The varieties planted are mainly Rex, Tehama, Meyric, Vina and Wilsons Wonder. They do not spray copper on their trees to combat blight as they do not think it is worth the cost or their time. The varieties most likely to be affected are their Vina and Tehama.

Basil and Trudi do not apply any fertilizer on their orchard instead they spread mushroom compost from Meadow Mushrooms. More recently they have been sourcing their compost from Living Earth and using a Sam spreader in autumn post harvest to give the compost time to integrate with the soil. Living Earth charge \$25 a tonne delivered. The compost is spread at 4 tonnes to the hectare. The NPK analysis for Living Earth organic compost (from their website) is nitrogen 1.5%; phosphorous 0.5%; potassium 1.09%; calcium 2.2%; magnesium 0.8%; and Sulphur 0.2%. Compost can be a cost effective alternative to conventional fertilizer. Plus, it has other benefits such as acting as a soil conditioner, increasing worms, increasing water holding ability, aeration and drainage.

Basil and Trudi's orchard has a mix of alders, poplars and Leyland Cypress

for shelter trees. Poplars need a lot of water and their roots can spread into the orchard and compete with walnuts trees.

Sheep are grazed in the orchard and this saves on mowing and weed control. However, they are not grazed in the orchard from January to until after harvest as their dung may contaminate the nuts. Irrigation is by drippers (4 litres per hour) with dripper lines tied to a wire above the ground so any blocked drippers can be easily seen. In the 2016, the Meyers harvested one tonne of nuts.

The second part of the field day was a presentation by Charles Merfield from the Biological Husbandry Unit at Lincoln University. His focus was namely organic agriculture and the process for gaining organic certification.

Charles talked about the three essential principles of organics as being: (i) no synthetic chemical sprays; (ii) no mineral fertilisers; and (iii) no genetic engineered crops.

Along with organic agriculture, Charles talked about other forms of sustainable agriculture. Terms such as agroecology, biodynamics, permaculture and spray-free were mentioned. Organics, according to Charles, is the only growing system where a market premium is paid.

Converting to an organic growing system requires finding alternatives to sprays and fertilisers. Copper is still allowed but there is a limit to 2-3kg of active ingredient per year. Instead of using herbicides, mowing is the only

viable alternative. Compost is used to supply nutrients as well as sowing clover to fix nitrogen in the soil.

Charles outlined the certification process for organics. There are three organic auditors in New Zealand: Biogrow; AsureQuality; and OFNZ (Organic Farm NZ). There is a three - year process to convert. Growers also need to complete a management plan, which includes:

- Maps and information about the property;
- History of conventional inputs (fertilisers and chemical sprays);
- Soil tests for nutrient, organic matter, DDT, heavy metals;
- Property history;
- Property management – a list of all inputs to be used;
- An environmental management plan – soils, biodiversity, water bodies;
- Water quality; and
- Planned production and activities for the coming year.

There is an annual audit and inspection paid for by the grower. This can cost \$1,500 each time. Once the grower gains certification the audit process is then every three years.

Converting your walnut orchard to organics is relatively straight forward compared to most horticultural crops. Organic growers can apply up to three copper sprays, substitute fertilisers with organic composts and mow instead of spraying herbicides. Walnuts NZ currently pay a premium for organically certified walnuts.

## Walnut sales hit 13% rise at Waitrose

October 2017

Waitrose, a chain of British supermarkets, is reporting that sales of the humble walnut are up 13% year on year at Waitrose as customers continue to look to nuts for healthy snacks and for healthier ingredients for their dishes.

Celebrity chefs including Hugh Fearnley-Whittingstall, Mary Berry and Lorraine Pascal, have recently included numerous walnut based recipes in their cookery books also helping to whet appetites for all things walnut.

Tim Shaw, Nut Buyer at Waitrose said; “Walnuts look set to be the new nut of choice. Providing a variety of vitamins and minerals, walnuts are a great snack on the go and no longer need to be the one-trick nut confined to coffee cake.”

*For full article please refer to source:*

<http://www.sectorpublishingintelligence.co.uk/news/1824006/walnuts+sales+hit+13+rise+at+waitrose>

## 30% Decline in Walnut Prices

November 2017

The walnut traders and farmers in Kashmir, India are a worried about the thirty per cent decline in the prices despite the better quality of the walnut grown.

Walnuts grown in Kashmiri are purely organic, as no fertilizer or pesticide was used in the walnut farming.

Last year, quality walnuts fetched the farmers around 350 rupees per kilogram; this year, the rates have come down to 170-190 rupees per kilogram.

While the farmers are unable to pinpoint the reasons, they can only speculate that an increased import of walnuts in India and apathy of the government were the reasons.

*For full article please refer to source:*

<http://kashmirreader.com/2017/11/01/30-per-cent-decline-in-walnut-prices/>

## Margaret's Column

### Walnut Harvest 2017

Imagine eagerly anticipating the annual harvest, six weeks hard but satisfying work ahead to reap the orchard's bounty. You are ready with all the gear in ship shape condition just hoping the aging body won't let you down. But you have some young people you have raised to replace you so you'll be right.

That was us. On the second day of work the unforeseen occurs. The super duper over-spec'd harvesting machine, imported at great expense catches fire for no reason that is immediately obvious. A water hose is nearby but in no time the damage is done before the fire is out.

We call the insurance man. All is well, machine written-off after some investigation. Apart from the prospect of long days of hand harvesting we were somewhat relieved.

This type of incident can and does happen more often than you think. Fortunately for us we had put a realistic value on the said machine quite recently and had it listed along with other tractors and implements. I would urge all growers to ensure their equipment is properly insured. Ask what would happen at your place if the same were to occur. In fact double check that you have the right policy for your needs.

If you are wondering how we managed to harvest 4,000 walnut trees. Well, that is another salutary story. The Horsbrughs, who are about 12 kms away, let us use their harvester, which is similar to ours in between the various rounds of their orchard. It was transported with great care on Kaylene Fenton's car trailer pulled by Roger Slee's trusty Ford Ranger. Not only that, but Jo Horsbrugh also put two trailer loads of our nuts through their processing and drying facility. To speed up their harvest Frank used our shaker machine to shake their trees.

The drying of nuts this season, as most will be aware, was also problematic. In direct contrast to the 2016 harvest, the nuts this year were very wet and heavy. Some fell into the category of stones as they failed to float through the de-stoner. Our dryer system of 12 full bins over a tunnel of warm air could not cope. We added a gas heater, pointing it towards the fan to supplement the electric heating elements. At first the extra heat helped until the heater itself stopped working. Under guarantee it could not be fixed until after the long weekend and we needed to have the gas fitters install a four-bottle station with a line in from outside the shed and a different regulator. Back to the drawing board for that next year, as well as a new harvester.

Needless to say we were very relieved to close the doors on our 2017 harvest.

Margaret Brenmuhl  
Aylesbury Walnuts<sup>2</sup>

## WASHING & DRYING EQUIPMENT

*Field Day (July 29, 2017) follow-up Article by Dave Malcolm*

The field day began at Frank and Margaret Brenmuhl's 4,000-tree property near Aylesbury. This year they still managed to harvest 17 tonnes of walnuts regardless of their Roussett harvester catching fire just before the harvest. Frank emphasized the benefits of sharing machinery to offset capital costs.

The theme for the day was to look at washing and drying equipment. Nuts coming in from the orchard are conveyed up an elevator to a barrel washer that can wash, de-stone, aspirate and sort up to 500 kilograms of walnuts an hour.



The sorted nuts are then dried in wooden bins stacked three high. Electric and gas heating can provide 60 kilowatts of energy, as required, to heat the air passing through a large fan. This warm air is conveyed under the bins through one meter wide by 300mm high wooden ducting.



Warm air flows up through the bins drying the nuts. Sensors in the bins monitor the humidity and temperature with heating turned off at 40 degrees. The airflow through the bins is strong enough to float a sheet of ply sitting on the bins.



The bins have inspection holes for sampling the nuts for moisture content. Frank uses a Protie meter to measure the moisture level in the minced shell and kernel. The nuts this year took 60 hours to dry to a 9% moisture level.

Frank and Margaret store their nuts in bins, which are handled by a forklift. Forklifts can be hired or can be bought for between \$7,000 and \$20,000. Anyone considering moving to a bin system for storing nuts needs to consider how they will move and stack these bins which can weigh up to 500 kilograms.

The next property the group visited was Nelson and Wilma Hubber's walnut orchard in West Melton. Nelson showed us his home built walnut harvester which can efficiently pick up walnuts and separate any leaves and sticks by blowers, before the nuts are augured into a bin on the back.

For more harvesting information please see our NZWIG [website](#).



Nelson also showed the group his home built washer made from a large plastic water tank with slits cut into the sides and a water blasting nozzle and baffles inside the rotating drum to clean the nuts. He and Wilma process about half a tonne of nuts on a normal harvest day and try not to work after 5pm.



We then looked at how the nuts are dried using dehumidifiers. The nuts are placed in drying bins with a grated floor and carpet drying fans to blow air through the nuts. There is a fan for each of the four bins. Carpet driers can be purchased at Precision Instruments, Accurate Instruments or Topmaq Industries. Above the drying bin is a mounted Dimplex dehumidifier.



Dehumidifiers are more efficient at higher temperatures and lose their efficiency at lower temperatures so a domestic oil column heater is used to keep that drying room at 20 degrees or better. This year the nuts stayed in the drying bins for about four days to get them to the required moisture content.

Drying walnuts at harvest is the most crucial step to ensure walnut quality. Any system needs to ensure that nuts are dried sufficiently so that they will not go mouldy during storage and the kernel will not turn a darker colour. For most growers drying their walnuts can be a bottleneck in the process, especially if humidity is high and large volumes of nuts need to be handled in a short amount of time as was experienced this year.

Any system needs to have sufficient capacity to handle large quantities of nuts. The moisture level of kernel and shell needs to be no more than 9% before packing into sacks or bins. Nuts will be almost impossible to dry if humidity levels are above 65%. The drying process becomes more efficient if heat is added to flowing air over walnuts. Nuts should not be heated above 35 degrees Celsius as they will become rancid. Another thing growers need to consider is how to remove damp air from their sheds used for drying walnuts. Fans can be used to extract moist air from the drying area. Some growers separate the drying area from the storage area so that nuts that have been dried are not subject to high levels of humidity. [\[2\]](#)

## Infrared Dries Walnuts Faster – Energy Savings

August 2017

United States Department of Agriculture Research Service has been working on a drying method that uses infrared technology to reduce energy use in the drying process and improve nut quality.

Infrared, a form of intense light that's felt but not seen, is a type of electromagnetic radiation much like radio waves, ultraviolet radiation, and microwaves.

The new infrared-drying process quickly removes moisture from the surface of walnuts, which shortens total drying time by 35 percent. It reduces overdrying and underdrying and allows the walnuts inside the shells to maintain their color and exceptional polyunsaturated fat content.

A commercial-scale pre-drying unit using this technology was successfully demonstrated during the 2016 walnut harvest season at Emerald Farms in California.

The California Energy Commission reports that infrared technology in the drying process could reduce greenhouse gas emissions, as the infrared emitters do not produce NOx or greenhouse gases, and the technology will also reduce natural gas consumption.

*For full article please refer to source:*

<https://agresearchmag.ars.usda.gov/2017/au-g/infrared/#printdiv>



## Committee Members

*At the AGM held on July 29, 2017, the following persons were elected unopposed onto this year's committee:*

### **WIG Committee**

Chairman:	Nelson Hubber
Honorary Treasurer:	Anna Morris
Secretary:	Maria Tiede
Events Coordinator:	Dave Malcolm
HEA Quality Stds:	Ian Sheerin
Newsletter Editor:	Kaylene Fenton
Research Liason:	Hugh Stevenson
Members:	Russell Hurst

### **Research Committee**

Coordinator:	Heather North
Members:	Anna Brenmuhl
	Dave Malcolm
	Clive Marsh
	Nick Nelson Parker
	Graeme Nicholas
	Hugh Stevenson

### **Promotions Committee**

Coordinator:	Ngaire Sigmund
Members:	Trudi Meyer
	Nelson Hubber

It should be noted, there is ongoing concern regarding the future of the NZWIG committee, given current energy levels and member numbers. Regrettably, there has been a notable lack of new members standing for the committee whereby we would like to encourage new members to get actively involved in our industry group.

As such, it was agreed at a NZWIG committee meeting and subsequently approved at the AGM to recruit a paid honorary treasurer. We wish to extend a special thank-you to Anna Brenmuhl for her past efforts and commitment as our previous Treasurer.

## Promotion Worthwhile

October 2017

NZWIG members who helped with the Walnut Promotion event at the West Melton Saturday Market and the West Melton Shopping Centre on October 14<sup>th</sup> were really pleased with the response.

“When you try things like this you always wonder how they will turn out” said Ngaire Sigmund who spearhead the organization of the day. However, she and other growers who helped man the stands were very pleasantly surprised by the interest and enthusiasm of the public.

“It was a small start but we received positive feedback that will help us expand our future promotional efforts and build on what we learned.

It’s heartening to find out that more and more people are valuing walnuts, the healthy whole food that we grow.”



## QI: Quite Interesting Facts

- Because walnuts resemble the brain, they were believed in medieval times to cure headaches.
- NASA has used pulverized walnut shells as thermal insulation in the nose cones of its rockets.
- Depending upon the species, walnut trees can survive from 50 to 250 years.
- The walnut tree’s roots are strong and deep. It enhances its survival through a phenomenon called allelopathy, where the roots secrete chemicals called juglones that inhibit the growth of other plants near it.

## How to Remove Ugly Wood Floor Scratches with a Walnut

Nothing is more annoying than finding a scratch on a beautiful piece of furniture or your nice wooden flooring. Thankfully, you can fix those pesky marks — with just a walnut.

When you find a scratch on your furniture or wood floor, get some fresh walnuts and wipe the area clean of dust and debris.

Next, take a walnut and break it in half to expose the kernel of the nut. Then, rub it vigorously along the scratch. You’ll notice it leaves a slight oily residue along with some debris from the nut itself. You can simply wipe that away with your bare hand or a soft, dry cloth.

The scratches amazingly disappear right before your eyes as if they never happened! The oil from the walnut soaks into the wood and causes the scratch to fade.

Here’s the YouTube video:

<https://www.youtube.com/watch?v=AiDKcjGFhRs>

## REMINDER

### 2017/18 NZWIG Membership Fees are now DUE

Annual Membership Fee	\$100
Second Person per Orchard (wishing to be a personal member)	\$20

We prefer to receive payment of membership fees via online banking. NZWIG’s Bank Account Details with Westpac are as follows:

**03-0767-0439959-00**

Please ensure you provide your ‘surname’ as a reference.

Any queries, please contact Anna Morris ✉: [treasurer@walnuts.org.nz](mailto:treasurer@walnuts.org.nz)