



## Walnuts NZ Co-operative Ltd

142 Tricketts Road, West Melton, RD6 Christchurch 7676, New Zealand  
Phone: +64 (3) 347 8103, Email: walnutsuppliers@crackernut.co.nz, Web: www.crackernut.co.nz

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# Harvest 2017 Information for walnut growers

15 April 2017

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## 1. Grading and forecast payout schedule for 2017/18

### Cultivar categories

In the past, growers have kept all cultivars (even minor ones) separate in order to attract the highest prices for their walnuts. We appreciate the extra labour this can take on the orchard so this year we have reduced the number of cultivars that need to be separated. The remaining cultivar categories are based on shell thickness, ease of kernel extraction and other factors that impact on the efficiency of our cracking process at the factory. They also relate to particular market requirements.

### ***Categories of grafted, selected cultivars***

1. Grafted Rex: Batch must be at least 90% Rex
2. Grafted Meyric: Batch must be at least 90% Meyric
3. Grafted NZ Purple: Batch must be at least 90% NZ Purple
4. Grafted – Other: All other grafted cultivars (other than Rex, Meyric, NZ Purple and Wilsons Wonder) *can be mixed together*. Batch must be at least 90% 'other' grafted, selected cultivars (e.g. Tehama, Serr, Dublins Glory, Vina, Ble-300 (Stan) etc.), i.e. the total amount of Rex, Meyric, NZ Purple, Wilsons Wonder and seedling walnuts (added together) in the batch must be less than 10%.

### ***Categories of seedling or less-preferred walnut types***

5. Wilsons Wonder types (extra-large nuts)
6. Non-grafted (Seedling – wild)

### ***Mixtures of categories***

7. Any mixture of the above categories (1–6), e.g. Rex and Meyric; grafted and seedling; Rex and Vina; Wilsons Wonder and Meyric.

Categories 1–4 (grafted, selected) are preferred and qualify for higher pricing (depending on their other quality characteristics). Categories 5 – 7 qualify for lower pricing. See the grade definitions below.

### **Sizing**

Apart from taking out very small ('broad bean' sized) walnuts, you DO NOT need to size-sort your walnuts as the factory is purchasing sizing machinery. Your walnuts can come in to the factory with all sizes mixed into your bags or bins. However, your pay-out will take account of the proportion of walnuts that fall into each size grade (in addition to the other factors specified in the grading system). The size we consider to be too small ('broad bean') is where the walnut can pass through a hole 24 mm in diameter and these walnuts should be rejected.

### **A batch of walnuts will be rejected if –**

- it contains animal manure
- it contains rat bait or vermin
- it is tainted with the smell of solvents, fuel, etc.
- it is above the specified moisture content.

We do place bags of walnuts from different growers together in a single bin for storage purposes – particularly crop from smaller growers. If you have contamination in your crop (e.g. animal manure, rat bait) and this cross-contaminates another grower's crop, we reserve the right to charge you all reasonable costs of clean-up and rejection of the other grower's crop (as well as your own).

We reserve the right to test for spray residues and for microbial contamination such as E. coli, Salmonella and Listeria, and to reject the batch if harmful levels are found.

If a batch of walnuts comes in too wet (averaging above 9% whole-nut moisture content or 5.5% kernel moisture content) then we would initially reject the batch but, if the walnuts are of sufficient quality (e.g. not mouldy), then we would give the grower the option of drying the batch down further for re-submission. Alternatively, we may be able to arrange further drying, which would be done at the grower's expense.

### **A batch of walnuts can be rejected if –**

- it contains more than 20% withered or black kernel
- it contains rotten or mouldy kernel
- it contains extraneous matter such as straw, plastics, etc.
- the walnuts are dirty.

However, we have the option of trying to extract useful product out of the batch if we think it is feasible and can be done profitably. We would set a price for the 'recovered' walnuts at the time, depending on difficulty of extraction.

## Grade 1: suitable for in-shell use of walnuts

- At least 90% must be larger than 30mm and none can be smaller than 28mm.
- Less than 10% of nuts have external shell faults, e.g. stains, dark-coloured/discoloured shell, adhering husk, misshapen shell
- Less than 10% of nuts have internal faults (assessed by cracking a sample), e.g. kernel is yellow, black or shriveled, or shell is blank. No mould/rot allowed.
- Cultivar category must be 1, 2, 4, 5, 6 or 7. Note that we do not sell NZ Purple in-shell – it will always be cracked for kernel.

If your walnuts qualify for in-shell use but the factory chooses to crack them for a kernel product, you will still be paid out on the Grade 1 price schedule below.

*Forecast Grade 1 prices per kg of dry in-shell walnuts (excl. GST):*

*certified organic grafted (categories 1, 2, 4) \$5.51,*

*conventional (non-organic) grafted (categories 1, 2, 4) \$3.76,*

*walnuts from seedling ('wild') trees, Wilsons Wonder and mixed categories (categories 5, 6, 7) \$3.20.*

## Kernel grades

In future years we wish to determine payout and grading for kernel based on kernel weight and quality after cracking and sorting. However, we are not practically able to do this at the factory at this stage. In the meantime, we will grade walnuts for kernel (cracking) using a sample taken from your bags or bins on entry to the factory. If we have insufficient Grade 1 walnuts, we may sell this grade in-shell.

### Grade 2 kernel

- 80% of nuts are larger than 28mm and none can be smaller than 26mm
- Less than 18% of yellow/brown/discoloured kernel
- Less than 2% of withered or black kernel
- No mouldy or rotten kernel
- Can be in any cultivar category 1–7.

*Forecast Grade 2 prices per kg of dry in-shell walnuts (excl. GST):*

*certified organic grafted (categories 1, 2, 4) \$5.25,*

*NZ Purple (category 3) \$5.25,*

*conventional (non-organic) grafted (categories 1, 2, 4) \$3.50,*

*walnuts from seedling ('wild') trees, Wilsons Wonder and mixed categories (categories 5, 6, 7) \$2.97.*

### Grade 3 kernel

- Any size above 24mm – nuts smaller than 24mm will be rejected
- Less than 18% of yellow/brown/discoloured kernel
- Less than 2% of withered or black kernel
- No mouldy or rotten kernel
- Can be in any cultivar category 1–7.

*Forecast Grade 3 prices per kg of dry in-shell walnuts (excl. GST):*

*certified organic grafted (categories 1, 2, 4) \$4.90,*

*NZ Purple (category 3) \$4.90,*

*conventional (non-organic) grafted (categories 1, 2, 4) \$3.15,*

*walnuts from seedling ('wild') trees, Wilsons Wonder, and mixed categories (categories 5, 6, 7) \$2.68.*

### Grade 4 kernel

- Any size above 24mm – nuts smaller than 24mm will be rejected
- Less than 20% by weight of withered or black kernel

- Less than 2% mouldy or rotten kernel
- Can be in any cultivar category 1–7.

*Forecast Grade 4 prices per kg of dry in-shell walnuts (excl. GST):  
 certified organic grafted (categories 1, 2, 4) \$4.03,  
 NZ Purple and conventional (non-organic) grafted (categories 1, 2, 3, 4) \$2.28,  
 walnuts from seedling ('wild') trees, Wilsons Wonder, and mixed categories (categories 5, 6, 7) \$1.94.*

Forecast prices are indicative and conservative (at the lower end of our predictions. They are subject to review by the co-op during the year.

## 2. Having your walnuts dried at SST

The co-operative has negotiated a walnut drying price with Southern Seed Technology (SST) near Irwell, Canterbury. We are not operating the drying service ourselves but are just facilitating the arrangement between the grower and SST. For ease of administration (of both SST and growers), the co-op will pay SST in bulk for all walnut drying then deduct the relevant amount from the final payout of growers who choose to dry their walnuts at SST.

**Contact details for SST:** <http://sst.co.nz/>  
 Phone Chris (03) 329 1750 or 027 870 6588  
 285 Lake Road, Irwell, Canterbury

Walnuts will be received at SST during normal business hours, by prior arrangement. Please phone SST ahead to advise when crop will be delivered, along with estimated number of bags/bins. Drying is available from 29 March to 20 May. *All deliveries of walnuts to SST must be accompanied by a completed consignment note.*

Growers are responsible for delivering their crop (clean walnuts) to SST. If you are having your walnuts dried at SST then stored by the factory, we will arrange for your walnuts will be transported and stored as part of the total price (see the price break-down below). However, if (after drying at SST) you are storing them yourself or at another approved facility (see further notes on storage below), you are responsible for picking your walnuts up again after drying and taking them to your storage facility. The storage and transport components of the cost will be subtracted in this case so that you will pay only for the drying itself.

The break-down of prices is as follows:

- SST Drying: 32 cents per kilo WET WEIGHT (i.e. weight on arrival at SST);
- Transport to storage: 9.5 cents per kilo WET WEIGHT;
- Storage: 15 cents per kilo DRY WEIGHT.

Alternatively you can dry your own walnuts – see notes later in this newsletter.

## 3. Storage

Storage space will be limited at the factory itself because our rising crop volume means that more space is now taken up with processing equipment. The factory will need to hire off-site storage to supplement its own. At the same time, to meet our HACCP food control plan and to ensure quality walnuts, we are placing a greater emphasis on the suitability of storage facilities this year. This means we are in a

transitional situation with regard to storage.

To safeguard walnut quality, all growers should ensure their nuts are either sent in to the factory or placed in an approved storage facility as early as possible after drying. If you supply over 1 tonne and believe you have suitable facilities to store your own walnuts (and perhaps those of other growers) we are happy to discuss this on a case-by-case basis. We may need to inspect and approve your facilities. You would need to transport your crop to the factory yourself when we contact you to ask for delivery. Storage requirements include:

- Free of vermin
- Free of fuel, diesel, solvents etc., as these can taint the walnuts. For example it is not acceptable to store the walnuts in a garage where there is also a car parked or storage of fuel.

Shipping containers can provide suitable storage at reasonable cost.

Our biggest growers need to store their own walnuts in an approved facility as we do not have space in the factory storage for these large volumes immediately after harvest. For smaller growers drying their own walnuts, please phone in advance to make an arrangement for your walnut delivery to the factory. We may charge a small storage fee to assist with off-site storage. If you do not have suitable storage facilities, please bring your walnuts in to the factory promptly once they are dry so we can look after them and maintain quality.

**Grading at grower's approved storage facility** (growers who store their walnuts at a location other than the factory):

- Sampling may take place at the grower's storage facility prior to delivery to the factory.
- Moisture content must meet approved level, and must be verified by the factory.
- We may undertake an audit of your storage facility.

**In any case, your walnuts must be either delivered to our factory premises or in an approved storage facility by 30 September to receive the interim payment in October/November.**

## 4. Consigning your walnuts to the factory

*All consignments of walnuts to the factory must be accompanied by a consignment note.* You should have received the consignment note form with this newsletter. If you are having your walnuts dried at SST, take the consignment note along with your wet walnuts, and SST will pass a copy of this to the factory. If you are having your walnuts washed/dried and stored by another grower, you should likewise take the consignment note along with your walnuts, so that the grower can keep this record with the consignment and also send a copy to the factory.

As in previous years please mark each approved bag or bin with your own assessment of the quality category of the walnuts inside: **T** (top quality), **S** (standard quality), **L** (low quality), and record this assessment on your consignment note.

Smaller growers having their crop dried at SST will have their walnuts transported from SST to the factory as part of the arrangement. If you are drying your own walnuts please deliver them, once dry, to the factory on weekday mornings. This must be by prior arrangement – phone the office 03-347-8103, or after hours contact Richard 027-366-9964. We cannot accept incoming walnuts without a staff member present as consignment notes **MUST** be checked in to meet our HACCP food control plan.

For those outside Canterbury we may be able assist in coordinating transport arrangements between growers – contact the office (03-347-8103) if you would like to discuss this.

Please let us know at your earliest convenience whether you plan to supply walnuts to the factory in 2017 (particularly if you plan to store them elsewhere than the factory) and provide us with an estimate of your crop volume. Email: [walnutsuppliers@crackernut.co.nz](mailto:walnutsuppliers@crackernut.co.nz); Phone 03-347-8103.

## 5. Bags/bins for storing and transporting walnuts

### Onion bags

Onion bags and labels will be available at the factory as usual. Do not use old sacks, used fertiliser bags, or similar, to put walnuts in – remember this is a food product we are handling! Do not deliver walnuts in plastic bags or cardboard boxes/cartons. If we supply you with onion bags then you have an obligation to return them to us either full or empty after harvest.

Walnuts can be dried on a forced-air dryer, such as that at SST, in onion bags. If you are doing this we recommend that you don't fill the onion bags completely full. For proper drying, the bags should be quite loose and floppy so that they fill the gaps between themselves when they are put in the drying bins. *About 80% full is about right.*

If you are not using a forced-air dryer with good air flow (such as that at SST), the walnuts must be dry before they go in the onion bags. Undried walnuts in an onion bag will not dry properly (even if you hang the bags up) and may go mouldy or dark-coloured.

### Bulk handling, bins and storage

As our crop sizes increase, handling nuts in bulk will become the norm, so the Co-op has decided on a standard size of wooden bin that will fit into shipping containers efficiently. Shipping containers are easy to procure and are a popular vermin-proof 'storage shed'.

Walnut bins sized so that they fit into a 20-foot shipping container:

Small bin: 1.100m (Front) x 1.140m (Side) x 0.740m (Height)

\*\$78.46 + GST ea. 30 bins per container (3 layers of 5 x 2), so \$2376.60 / container

Large Bin: 1.100m (Front) x 1.140m (Side) x 1.110m (Height)

\*\$95.85 + GST ea. 20 bins per container (2 layers of 5 x 2), so \$1933.20 / container

\*Prices for completed bins (ex yard) made in untreated timber from Mitchell Bros. Sawmillers in Darfield, Canterbury. Phone: 03-318-8414, ask for Tony.

An alternative supplier of these bins is Shands Road Sawmill in Jones Road, Rolleston, Canterbury

<https://www.srs.co.nz/>, 03-347-4537, [info@srs.co.nz](mailto:info@srs.co.nz)

Timber is 25mm thick and base is 25 +100 +25 = 150mm in height. Timber in contact with walnuts must be untreated, but you can have the base made in H3 (so it does not rot on wet ground) at additional cost. Using the larger bins gives you about 1.5 cubic-metres more storage per shipping container.

- Bins need to be branded with grower's name.
- Bins need to be marked with a tare weight when dry.
- Bins must have the dimensions above otherwise it will cause difficulties when we try to stack them with other bins in the factory or our off-site storage.

## 6. Drying your own walnuts

Growers with a small quantity of crop can dry their walnuts spread out on racks. Once you have more

than about 500 kg to 1 tonne of walnuts you may find it easier to build a small single-bin-dryer on your property – these have a mesh floor with a carpet-dryer (easy to buy from hardware stores) blowing air in the bottom – contact Nelson Hubber (03-347-4040; 027-272-9738) for assistance.

Once you are getting up to the 5 tonne mark, you may consider something like a pot-dryer/bin-dryer with multiple bins stacked over air-ducting, with a fan and heater to blow warm air up through the bins. Talk to Frank Brenmuhl (027-2244-009) or Colin Prebble (021-325-900) to learn about this method. For larger-scale equipment talk to Andrew Horsbrugh (027-436-1914).

## 7. Moisture measurement of walnuts

### Walnut moisture content

This year, the factory is changing the method of measuring the moisture content of walnuts. In the past we have measured the moisture content of the kernel only, but from 2017 onward we will be measuring the moisture content of the whole nut, i.e. both shell and kernel broken up together. This is the usual way it is done in USA and Europe so it will mean our measurements are consistent with international standards.

There is also another reason for using whole-nut, rather than kernel-only, testing, and this is particularly relevant to moisture testing during and immediately after the drying process. During drying, the shell quickly and easily loses its moisture, and then gradually the moisture from the kernel makes its way through the partition and out through the shell. After the walnuts are taken off the dryer, this process continues for several days until the moisture content of the kernel and shell come to equilibrium. Prior to equilibrium, while the movement of moisture is still occurring, it is important to measure the average across all components – kernel, partition and shell – because measuring the kernel only does not tell us what moisture content it will settle down to at equilibrium. So, for growers drying their own walnuts, we recommend using whole-nut moisture measurements for determining when the nuts are sufficiently dry and can therefore be taken off the dryer. While kernel-only moisture measurement is valid during storage (at equilibrium) the factory will continue to use whole-nut measurements at that time for consistency with international standards.

In addition to the change in the measurement method, we will be requiring walnuts to be dried down to a lower moisture content than has been the case in the past (i.e. they must be drier). This is to ensure that our walnuts do not go mouldy in storage and also to minimise the risk of storage moth.

Our aim is for walnuts to be dried to 8% moisture content *of the whole nut*, i.e. the shell, kernel and partition broken up together should have a combined moisture content of not more than 8% moisture (by weight). Note that, at equilibrium, this is equivalent to a kernel-only moisture content of approximately 4% (which is drier than the 6% kernel moisture limit we have used in the past). The 8% (whole nut) moisture content has been the standard for storage in the USA, EU<sup>1</sup> and Chile for a long time, and storage spoilage is very rare at this level.

However, in 2017, we appreciate the system is new and that some growers are having difficulties with aspects of the lower moisture standard and the moisture measurement method. Therefore during this transitional year, we have some tolerance around the 8% ideal, and ask growers to dry their walnuts down to at least 9% whole-nut or 5.5% kernel moisture.

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<sup>1</sup> We are aware that the ‘fresh nut’ trade in Europe allows for up to 12% whole-nut moisture content (equivalent to a kernel-only moisture content of approximately 5.5%). However, these walnuts are usually not stored for very long – they are a seasonal product and typically consumed within a few months – whereas we need to plan for longer-term storage.

## Measuring walnut moisture content on-farm

Ideally, growers will measure the moisture content of their crop with an approved meter (see information below) before consigning the crop to the factory. For growers who have their own meters we have prepared instructions for having it calibrated and using it to measure whole-nut (as opposed to kernel-only) moisture content. Please note that you will need to get your meter recalibrated at FF Instrumentation so that your whole-nut moisture measurements will be correct.

However, we do understand that not all growers have meters available. In the meantime, a useful rule-of-thumb for checking your walnuts while they are drying is that once the partition becomes brittle (snaps when you break it) then the walnuts should be sufficiently dry. To be sure, we recommend that you send a sample to someone who has a meter if you can. You can send a representative sample of your walnuts to the factory (a good double-handful is required) and we will test them for you. Alternatively, growers who own meters include Aylesbury Walnuts (Frank Brenmuhl, 027-2244-009), Tunlaw Farm (Andrew Horsbrugh, 027-436-1914), Nelson Hubber (03-347-4040; 027-272-97380, and Nut Tree Farm (Colin Prebble, 021-325-900), and you are welcome to contact them to make arrangements for having a sample of your walnuts tested.

When your crop arrives at the factory, we will test the moisture content. If a batch of walnuts comes in too wet (averaging above 9% whole-nut moisture content or 5.5% kernel moisture), we would initially reject the batch but, if the walnuts are of sufficient quality (e.g. not mouldy), then we would give the grower the option of drying the batch down further for re-submission. Alternatively, we may be able to arrange further drying, which would be done at the grower's expense.

### Moisture meters



Walnuts NZ Co-op Ltd has a Wile55 moisture meter for measuring the moisture of walnuts. If you'd like to buy a meter we currently recommend the Wile55 meter with walnut (whole nut) calibration from FF Instrumentation Ltd, 48 Hayton Road, Sockburn, Christchurch. Phone 03-962-2960, [www.ffinstrumentation.co.nz](http://www.ffinstrumentation.co.nz)

The price is \$850.00 + GST and if you quote the following code this year you will get a 10% discount: **WNZ2017**

You will also need a hand-cranked mincer/grinder for preparing a sample for testing – see the Co-op's instructions on moisture measurement method and calibration of your meter.

## 8. Other tips and requirements relating to walnut quality

### Looking after the quality of your walnuts on-farm

The quality of walnuts that are not looked after properly during harvest and storage may suffer, leading to the walnuts being rejected.

*Rodent control is vital:* It is essential that vermin are not brought into the factory in onion bags. This has happened in the past and it is not acceptable. If you are storing walnuts on-farm, make sure you have a pest-proof storage facility (such as a shipping container) and a good pest programme.

*Solvents:* Walnuts must be stored away from any solvent source such as petrol, diesel, glue or paint, as the fumes can very easily taint the walnut taste.

*Harvest regularly:* We recommend that you pick up your walnuts regularly, particularly in wet weather, to avoid deterioration and discolouration of the kernel. The most helpful thing that you can do for yourself, the industry and the Co-op is to supply high quality, clean walnuts.



*Drying:* The harvesting period extends over approximately six weeks, and walnuts should not be kept in a wet or semi-dry state otherwise they can go mouldy. Once the walnuts have been picked up, we recommend they are dried promptly.

*HACCP programme:* Refer to Walnuts NZ Co-op's HACCP food control plan requirements which will be on our website soon.

## **Do you graze livestock in your orchard?**

Sheep, cattle and other livestock MUST be removed from the orchard before 1 January (at the latest) to minimise contamination of the walnut crop. Ground where walnuts fall should be mowed at least twice to assist the removal of faecal matter etc.

Faecal matter arriving within a walnut shipment is a continuing issue and requires whole shipments to be rejected when faecal matter is detected. Refer to Walnuts NZ Co-op's HACCP food control plan requirements which will be on our website soon.

It is not acceptable to have livestock manure adhering to walnuts on the orchard floor. Even though you will be washing your walnuts, any manure washing around with the walnuts can potentially contaminate the shells with bacteria. We recommend not recycling the wash-water if there is any possibility of manure being present.

## **Spray use in the orchard**

Walnuts NZ Co-op Ltd has an approved HACCP food control plan which will be on our website soon. Part of this involves knowledge of sprays used on the orchard. All chemicals used must be approved for food production, and the manufacturer's guidelines for usage must be followed. Information about chemicals allowed and not allowed in food production can be found at:

<http://www.foodsafety.govt.nz/elibrary/industry/register-list-mrl-agricultural-compounds.htm>  
or phone MPI Food Safety 0800-008-333.

This year, as usual, you will just be required to record on your consignment note the names of sprays used on your trees and on the ground in your orchard. For this year, this will be your formal record/declaration.

In future we will need to view a copy of your orchard spray diary as part of our food control plan. We appreciate that, at the present time, some growers may not keep such records, so we don't expect you to have these available this year. However, we aim to work with growers on developing a standard recording template for use in coming years.

## **Old walnuts**

Any walnuts delivered after the end of December 2017 will be marked down as 'old walnuts'. Only \$1 per kg in-shell is paid for old walnuts. We do not accept out-of-season walnuts.

## **Useful contacts**

The website of Walnuts NZ Co-operative Ltd, the co-operative of growers that owns the walnut processing business, is <https://walnutsnz.co.nz>

NZ Walnut Industry Group (NZWIG) is an active group supporting the developing walnut industry in New Zealand. The group provides information on site selection, growing and maintaining your orchard, and has an extensive walnut growers' manual. Field days and information evenings are organised for members and friends. [www.walnuts.org.nz](http://www.walnuts.org.nz), Anna Brenmuhl: [treasurer@walnuts.org.nz](mailto:treasurer@walnuts.org.nz)

For walnut inspiration and recipes, see <http://walnutsplease.nz>

## 9. Payment for walnuts and shareholding in Walnuts NZ Co-op

In general Walnuts NZ Co-op Ltd makes a down-payment of \$1/kg (+ GST if any) in October/November. This will be paid out on walnuts accepted at our factory or in approved storage by 30 September. We aim to make the final payment in March (before the end of the financial year).

Growers will be informed in approximately February of the final grades and weights of their crop from the previous harvest.

If you are a shareholder and your crop exceeds the amount covered by your current share ownership, we will let you know how many new shares you need to buy to match your crop volume. You can make this share purchase in March with payment by offset against your final walnut payout.

If you are not currently a shareholder, you are welcome to join us. For information please contact Heather North, Email: [secretary@walnutsnz.co.nz](mailto:secretary@walnutsnz.co.nz), or Phone 03-325-3381.

Note that if you supply more than 2 tonnes (2000 kg) to the factory in a year, Walnuts NZ Co-op Ltd requires you to be a shareholder in order to supply (unless approved otherwise by the board). We would let you know in January/early February if your crop volume moves into this range.

Those who are not shareholders will be paid 15% less than the rates for shareholders.

**As a co-operative, we are here to here to help our growers. If you're unsure of any of these arrangements please free to contact us at the office.**