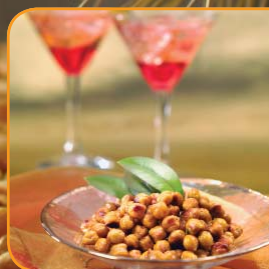


# Know your grains and legumes

A showcase of  
Australian grains  
and legumes



**GRDC**  
Grains  
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Grains &  
Legumes  
Nutrition  
Council

*Cultivating Good Health*



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## Measure and temperature conversions

|                  | Australia | United States equivalent |
|------------------|-----------|--------------------------|
| Cup              | 250 mL    | 8¾ fl oz                 |
| Tablespoon       | 20 mL     | ⅔ fl oz                  |
| Teaspoon         | 5 mL      | ⅓ fl oz                  |
| Oven temperature | 180 °C    | 350 °F                   |

This brochure has been developed by the Grains & Legumes Nutrition Council (formerly Go Grains Health & Nutrition) to provide general information on grains and legumes. For individualised nutrition and dietary advice see an Accredited Practising Dietitian (APD). Visit the Dietitians Association of Australia website to find a dietitian near you — [www.daa.asn.au](http://www.daa.asn.au)

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## Grains & Legumes Nutrition Council

The role of the Grains & Legumes Nutrition Council (formerly Go Grains Health & Nutrition) is to review the science and communicate the latest research findings about nutrition and health benefits of grains, grain-based foods and legumes to key opinion leaders, health professionals, educators, food processors, food manufacturers and the media so that they can encourage consumers to include these foods in their diet.

## Grains Research & Development Corporation

The Grains Research & Development Corporation (GRDC) is one of the world's leading grains research organisations, responsible for planning, investing and overseeing research and development, delivering improvements in production, sustainability and profitability across the Australian grains industry.





# For the goodness of grains

*Grains, both whole grain and refined, are staples in the diets of cultures around the world and are valued for their significant contribution to nutrient intakes.*

## Grains — a key part of the Australian economy

- Australia produces 35 million tonnes of grain, from 20 million hectares of land. The annual gross value is greater than \$9 billion, approximately 45% (valued at \$4 billion) of which is exported.<sup>1</sup>

## What's to gain from grains?

- Consumption of three serves of whole grain food is associated with a 26% reduced risk of type 2 diabetes and a 21% reduced risk of cardiovascular disease.<sup>2</sup>
- Cereal fibre from grain foods is linked to reduced risk of bowel cancer and heart disease.<sup>2,3</sup>
- People consuming three to five serves of whole grain foods a day tend to gain less weight.<sup>4</sup>
- Including one meal a day of refined grain core foods (such as a baguette, white rice or pasta) can be part of a healthy diet.<sup>5</sup>

## A word about carbohydrate

Where available, Australian and New Zealand (ANZ) nutrient values have been used. The ANZ carbohydrate values do not include dietary fibre. Where ANZ data was not available, data from the United States Department of Agriculture (USDA) was used. The USDA carbohydrate values are higher as they include total dietary fibre.

## Grains and nutrition

- Grain foods are the primary source of fibre, both soluble and insoluble, in the Australian diet.<sup>6</sup>
- Grain foods are a key contributor to protein, thiamin, magnesium and iron in the Australian diet.<sup>6</sup>
- Grains, and in particular, whole grains are rich in bioactive components, including antioxidants such as phyto-oestrogens and phytosterols, vitamins, minerals and trace elements.<sup>7,8,9</sup>

## Cooking with grains

- Cooking is easy and just the same as rice. Boil grains in water or stock until tender.
- Pre-soaking grains for a few hours allows for faster cooking times.

For additional information, or to download a copy of our latest update on grains, 'What's to Gain from Grains?' visit the Grains & Legumes Nutrition Council website: [www.glnc.org.au](http://www.glnc.org.au)

# BARLEYmax®

*BARLEYmax® is a novel barley grain developed in Australia by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) using traditional cereal breeding methods.*

*BARLEYmax® is a hull-less grain that can be readily used to manufacture whole grain foods. It has been incorporated successfully into a range of foods including breakfast cereals, muffins, cookies, bread and health bars. BARLEYmax® foods have a low glycemic index (GI) and have been shown to improve biomarkers of bowel health.*

## Did you know?

- As well as being high in both soluble and insoluble fibre, BARLEYmax® contains significant quantities of resistant starch which is increasingly being recognised as an important contributor to human health.<sup>11</sup>
- BARLEYmax® contains beta-glucan, the cholesterol-lowering soluble fibre.<sup>11</sup>
- BARLEYmax® contains twice as much total vitamin E as standard barley.<sup>11</sup>

## Cooking tips

- BARLEYmax® is currently on the market in Australia in breakfast cereals, whole grain wraps and whole grain sprinkles (Goodness Superfoods products).



| Nutrient      | per 100 g |
|---------------|-----------|
| Protein       | 19.4g     |
| Fat *         | 8g        |
| Dietary fibre | 25g       |
| Starch        | 24.7 g    |
| Sugar         | 5g        |
| Beta-glucan * | 10g       |

## Sources

Bird A, et al. *J. Nutr.* 2004;134:831–835.

\* Topping D, et al. *Starch/Stärke.* 2003;55:539–545.



## Bircher muesli

**Serves:** 2

**Preparation time:** 15 minutes  
+ overnight soaking

### Ingredients

- 1 cup BARLEYmax® Barley + Oats porridge (preferably Quick, but Traditional is fine too)
- ¼ cup BARLEYmax® Fibre Boost Sprinkles
- 1 cup fresh apple juice or orange juice
- ½ cup low fat plain yoghurt
- 1 tablespoon currants or sultanas
- 1 tablespoon chopped dried apricots
- ½ teaspoon ground nutmeg
- ½ teaspoon ground cinnamon
- ½ Granny Smith apple, grated (skin on) to serve
- Berries and slivered almonds to serve

### Method

1. Combine the Barley + Oats porridge, Fibre Boost Sprinkles, juice, yoghurt, currants or sultanas, chopped apricots, nutmeg and cinnamon in a large bowl and stir together. Chill overnight.
2. To serve, stir in the grated apple, put into a bowl and garnish with berries and almonds.

### Nutrition information per serve

Energy 1397kJ, Protein 11.4g, Fat 3.7g,  
Saturated fat 0.9g, Carbohydrate 60.5g,  
Fibre 11.8g, Sodium 146mg



# Greenwheat Freekeh™

*Freekeh is the name given to any grain which is harvested while immature and then roasted. It is a process rather than a variety of grain itself. This whole grain has a crunchy, nutty taste with a hint of roasted grain.*<sup>12</sup>

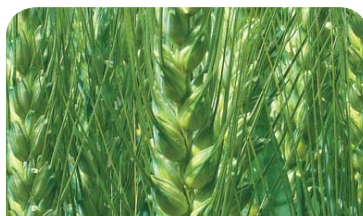
*Greenwheat Freekeh™ is currently made from wheat but in the near future freekeh may be available made from other grains including green barley and green triticale (wheat and rye hybrid).*

## Did you know?

- Greenwheat Freekeh™ contains gluten.
- Both whole and cracked Greenwheat Freekeh™ are whole grain.
- Greenwheat Freekeh™ is low GI.<sup>12</sup>

## Cooking tips

- Greenwheat Freekeh™ is easy to prepare and can be used as a side dish or as an ingredient in a variety of dishes including salads, pilafs, soups and even cakes.
- To prepare cracked Greenwheat Freekeh™ use 1 cup of grain to 2½ cups of water and boil for 15 minutes.
- To prepare whole grain Greenwheat Freekeh™ add 1 cup of grain to 3 cups of water, bring to the boil and simmer for 35 minutes.



| Nutrient      | per 100 g    |
|---------------|--------------|
| Protein       | up to 12.6 g |
| Carbohydrate  | 72 g         |
| Dietary fibre | up to 16.5 g |
| Calcium       | 53 mg        |
| Iron          | up to 4.5 mg |
| Magnesium     | up to 110 mg |
| Potassium     | up to 440 mg |
| Zinc          | up to 1.7 mg |

### Source

Greenwheat Freekeh™.  
Accessed online 22 June 2012 from  
[www.greenwheatfreekeh.com.au](http://www.greenwheatfreekeh.com.au)





## Greenwheat Freekeh™ kibbeh skewers

**Serves:** 4

**Preparation time:** 10 minutes

**Cooking time:** 50 minutes

### Ingredients

⅔ cup (120g) cracked freekeh grain  
 1⅔ cups salt reduced chicken stock  
 500g lean beef mince  
 1 egg, lightly beaten  
 2 garlic cloves, crushed  
 3 teaspoons ground cumin  
 1½ teaspoons cinnamon  
 ¼ cup finely chopped fresh coriander  
 1 tablespoon olive oil  
 Reduced fat Greek yoghurt and  
 lemon wedges, to serve

### Method

1. Place freekeh and stock in a saucepan, bring to the boil and then reduce heat to low. Cover and cook for 35 minutes or until grains are tender and most of the stock is absorbed. Drain and let cool for 10 minutes.
2. Add beef mince, cumin, cinnamon, garlic, coriander and egg to the cooled freekeh and mix until combined. Shape ¼ cup of mixture into an oval shape around a bamboo skewer.
3. Preheat a chargrill plate to medium high heat. Brush skewers with olive oil and cook for 8 minutes, turning regularly or until cooked through. Cover with foil and rest for 5 minutes.
4. Serve with reduced fat Greek yoghurt, lemon wedges and wheat berry and quinoa tabouleh (page 17).

### Nutrition information per serve

Energy 1719kJ, Protein 37.8g, Fat 18.6g,  
 Saturated fat 6.5g, Carbohydrate 23.2g,  
 Fibre 4.1g, Sodium 553mg

# Millet

*Before rice was widely consumed in Asia, it is thought that different varieties of millet were the staple grain in this region. This legacy persists in the Chinese language, where the signs for 'millet' and 'mouth' together make the word 'harmony'.<sup>13</sup>*

*Sorghum, a type of millet grain, is Australia's third largest crop. Sorghum is produced primarily in the northern growing region of Australia with an average annual production of over 2 million tonnes.<sup>1</sup>*

## Did you know?

- When you see millet on an ingredient list, it is almost always whole grain millet.
- Millet is gluten-free.

## Cooking tips

- Millet has a mild flavour that pairs well with other foods. It is often mixed with other grains or toasted before cooking to bring out the full flavour.
- **Fluffy millet:** Toast 1 cup of millet for 4–6 minutes in a dry pan then add 2¼ cups boiling water, simmer for 15 minutes, then let stand for 10 minutes. Great as a side dish.
- **Sticky millet:** Bring 1 cup of millet to boil in 2¾ cups water, simmer for 15 minutes, then let stand 10 minutes. Can be moulded in croquettes or patties.
- **Creamy millet:** Grind 1 cup of millet in a spice grinder. Bring 5 cups of water to a boil, then gradually whisk in millet. Cover, lower heat and simmer, stirring occasionally for 15 to 30 minutes until millet is tender. Ideal as an alternative to porridge or polenta.
- You can substitute up to 30% millet flour in your favourite baking recipes, and even more in foods such as biscuits that do not need to rise as much.



Image: Thanizhparthi Maan.

| Nutrient      | per 100 g |
|---------------|-----------|
| Protein       | 11 g      |
| Fat           | 4.2 g     |
| Saturated fat | 0.7 g     |
| Carbohydrate  | 72.9 g    |
| Dietary fibre | 8.5 g     |
| Folate        | 85 µg     |
| Calcium       | 8 mg      |
| Iron          | 3 mg      |
| Magnesium     | 114 mg    |
| Phosphorous   | 285 mg    |
| Potassium     | 195 mg    |
| Zinc          | 1.7 mg    |

### Source

USDA National Nutrient Database for Standard Reference, Release 23. 2010.



## Indian spiced millet pilaf

**Serves:** 4

**Preparation time:** 10 minutes

**Cooking time:** 30 minutes

### Ingredients

1 tablespoon canola oil  
1 onion, halved, thinly sliced  
1½ tablespoons mild Indian curry paste  
1 cup (200g) hulled millet  
2 cups salt reduced chicken stock  
2 carrots, halved and thickly sliced  
1 cinnamon stick  
2 cups (50g) baby spinach leaves  
¼ cup (45g) dried currants  
Fresh coriander leaves, lime wedges  
and reduced fat Greek yoghurt,  
to serve

### Method

1. Heat canola oil in large saucepan over medium heat. Cook thinly sliced onion, stirring occasionally, for 5 minutes or until soft.
2. Add curry paste and millet. Cook, stirring, for 1 minute or until aromatic. Add stock, cinnamon and carrot. Bring to the boil. Reduce heat to low. Cover and simmer for 25 minutes or until stock has absorbed. Remove from heat. Set aside, covered, for 10 minutes or until millet is tender.
3. Discard cinnamon stick. Use a fork to stir in baby spinach and currants. Cover and set aside for 2 minutes or until spinach just wilts.
4. Serve with lime wedges, coriander leaves and reduced fat Greek yoghurt. Great with chargrilled French trimmed lamb cutlets.

### Nutrition information per serve

Energy 472kJ, Protein 2.3g, Fat 7.1g,  
Saturated fat 0.6g, Carbohydrate 10.4g,  
Fibre 3.2g, Sodium 444mg

# Oats

*Oats are the fourth largest grain crop in Australia. Oats are the traditional grain for porridge, which makes them a favourite at breakfast time and also have demonstrated cholesterol-lowering benefits.*<sup>14</sup>

## Did you know?

- Oats almost never have their bran and germ removed in processing, making them whole grain.<sup>13</sup>
- Oats are higher in protein and unsaturated fats, and lower in carbohydrates than most other traditional whole grains.<sup>15,16</sup>
- Oats are rich in beta-glucan, a soluble fibre which lowers total and LDL-cholesterol.<sup>17</sup>
- Oats contain avenanthramides, which are polyphenols that may help protect blood vessels from the damaging effects of LDL-cholesterol.<sup>18</sup>

## Cooking tips

- Most oats are steamed and flattened to produce rolled oats, quick oats, and instant oats. This softens them and decreases cooking times.
- There are many ways you can cook with oats. They can be boiled into a creamy porridge, added to burgers and meatballs, or used as a great crispy topping for crumbles.

If you prefer a chewier, nuttier texture, try steel-cut oats, which consist of the entire oat, sliced once or twice. Cook for about 20 minutes for a porridge with a lower GI than rolled or quick oats.<sup>19</sup>



Image Stock

| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 11 g      |
| Fat              | 8.7 g     |
| Saturated fat    | 1.6 g     |
| Carbohydrate*    | 61.8 g    |
| Dietary fibre*   | 8.9 g     |
| Insoluble fibre* | 4 g       |
| Soluble fibre*   | 4.9 g     |
| Folate           | 18 µg     |
| Calcium          | 45 mg     |
| Iron             | 3.7 mg    |
| Magnesium        | 131 mg    |
| Phosphorous      | 411 mg    |
| Potassium        | 313 mg    |
| Zinc             | 1.9 mg    |

### Sources

NUTTAB. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.





## Apple berry oat crumble

**Serves:** 6

**Preparation time:** 10 minutes

**Cooking time:** 20 minutes

### Ingredients

2–3 apples, sliced  
2 cups (300g) frozen mixed berries  
1 cup (150g) plain flour  
90g low fat table spread for cooking  
1½ cups (135g) rolled oats  
2 tablespoons brown sugar

### Method

1. Preheat oven to 180°C. Lightly grease a 6 cup capacity baking dish.
2. Combine apples and berries in a bowl, mix; spread in prepared dish.
3. Place flour in a small bowl; rub in table spread until mixture resembles bread crumbs. Add rolled oats and brown sugar; mix to combine. Sprinkle over apples and berries.
4. Bake for 15–20 minutes or until golden.

### Nutrition information per serve

Energy 1025kJ, Protein 4.5g, Fat 9.5g,  
Saturated fat 2.1g, Carbohydrate 35.3g,  
Fibre 4.9g, Sodium 66mg

# Rye

*Rye was first cultivated in northern Europe and is the second most widely consumed grain in the world today. The primary production areas of rye in Australia are South Australia, New South Wales and Victoria.<sup>20</sup>*

*Rye provides a range of health benefits. Sourdough rye bread is usually low GI and has been shown to reduce insulin response to meals. Recent Australian research demonstrated that rye can increase the number of beneficial bacteria in the gut and help improve digestive health.<sup>21,22</sup>*

## Did you know?

- Rye is most commonly used in the production of bread. Rye bread is significantly denser than wheat breads as rye contains less gluten.
- Dark rye flour or bread is whole grain.
- In light rye flour or bread some of the bran has been removed so it is not whole grain.
- Traditional rye breads and crisp breads are made using the sourdough method.

## Cooking tips

- Rye berries can be eaten hot as a side dish or cooked into a pilaf, added to soups, or used as the base for summer salads.
- To cook, add 1 cup of rye berries to 4 cups of water, bring to a boil then simmer for an hour until cooked. Soaking rye berries overnight will reduce cooking time.
- Rolled rye flakes may be cooked as a porridge or toasted and added to breakfast cereals.



Image: Alupus

| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 10.3g     |
| Fat              | 1.6g      |
| Saturated fat    | 0.2g      |
| Carbohydrate*    | 48.8g     |
| Dietary fibre*   | 11.2g     |
| Insoluble fibre* | 7.5g      |
| Soluble fibre*   | 3.7g      |
| Folate           | 56µg      |
| Calcium          | 24mg      |
| Iron             | 2.6mg     |
| Magnesium        | 110mg     |
| Phosphorous      | 332mg     |
| Potassium        | 510mg     |
| Zinc             | 2.7mg     |

### Sources

USDA National Nutrient Database for Standard Reference, Release 23. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.



## Rye crostinis

**Serves:** 4

**Preparation time:** 5 minutes

**Cooking time:** none

### Ingredients

4 slices of rye bread (crusts removed)

4 slices of smoked ocean trout,  
cut into strips

4 tablespoons low fat cream cheese

1 tablespoon baby capers

Dill to garnish

### Method

1. Cut bread into quarters. Spread with cream cheese.
2. Top with ocean trout, baby capers and dill. Serve.

### TASTY TWIST

*Top with semi dried cherry tomatoes instead of ocean trout and top with small fresh basil leaves.*

### Nutrition information per serve

Energy 521 kJ, Protein 7.6g, Fat 1.9g,  
Saturated fat 0.5g, Carbohydrate 17.5g,  
Fibre 2.9g, Sodium 426mg

# Wheat

*Wheat is the most widely cultivated cereal crop in Australia and the world. Wheat has come to dominate the grains we eat because it contains large amounts of gluten that enables bakers to create breads.*

*World wide, Australia is the eighth largest producer with approximately 20 million tonnes, valued at \$5.3 billion, cultivated during 2009–10. As the world's fourth largest exporter, Australia sent \$3.6 billion of wheat overseas in 2009–10.<sup>23,24</sup>*

## Did you know?

- Each of these grains is actually a variety of wheat: semolina, burghul (bulgur or cracked wheat), spelt, emmer (faro), einkorn, greenwheat, purple wheat and kamut.
- The gluten in wheat enables bread to rise and hold the shape of a loaf.
- Durum wheat (made into pasta) and hard (bread) wheat are the two main varieties of wheat.

## Cooking tips

- Try substituting white all-purpose flour with wholemeal flour when baking. As a rule of thumb, you can generally substitute wholemeal flour for up to half the all-purpose flour in a recipe.
- To prepare burghul add 1 cup of burghul to 2 cups of boiling water. Soak for 20–25 minutes in a covered pot.
- Couscous is prepared by soaking in boiling water.
- You can use any variety of wheat in the recipe on the opposite page.



| Nutrient         | per 100 g   |
|------------------|-------------|
| Protein          | 10.4–15.4 g |
| Fat              | 1.5–2.5 g   |
| Saturated fat    | 0.3–0.5 g   |
| Carbohydrate*    | 60.4 g      |
| Dietary fibre*   | 12 g        |
| Insoluble fibre* | 10.5 g      |
| Soluble fibre*   | 1.6 g       |
| Folate           | 38–43 µg    |
| Calcium          | 25–34 mg    |
| Iron             | 3.6–5.4 mg  |
| Magnesium        | 90–144 mg   |
| Phosphorous      | 288–508 mg  |
| Potassium        | 340–435 mg  |
| Zinc             | 2.7–4.2 mg  |

### Sources

USDA National Nutrient Database for Standard Reference, Release 23. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.





## Wheat berry and quinoa tabouleh

**Serves:** 6 as a side dish

**Preparation time:** 10 minutes

**Cooking time:** 1 hour

### Ingredients


1 cup wheat berries (wheat grains)  
 1/3 cup white quinoa  
 2/3 cup salt reduced vegetable  
 or chicken stock  
 200g grape tomatoes, halved  
 3/4 cup chopped fresh continental parsley  
 1/2 cup chopped fresh mint  
 2 green onions, thinly sliced  
 1/4 cup fresh lemon juice  
 2 tablespoons extra virgin olive oil  
 Lemon wedges, to serve

### Method

1. Place wheat in a saucepan with 3 cups of water and bring to the boil. Reduce heat to low, cover and cook for 50–60 minutes or until wheat is tender. Drain and set aside to cool.
2. Meanwhile, add quinoa and stock to a small saucepan. Bring to the boil then reduce heat to low. Cover and cook for 10–12 minutes or until stock is absorbed and quinoa is tender. Fluff with a fork and set aside to cool.
3. Add quinoa, tomatoes, parsley, mint and onion to the wheat. Toss to combine.
4. Combine lemon juice and oil in a jug and season with salt and pepper to taste. Pour over wheat mixture. Toss to combine.
5. Serve with lemon wedges.

### Nutrition information per serve

Energy 817kJ, Protein 4.9g, Fat 6.9g,  
 Saturated fat 1.1g, Carbohydrate 28.7g,  
 Fibre 5.9g, Sodium 125mg



# For the love of legumes

*Legumes (also known as pulses), include beans, peas, chickpeas and lentils. According to the draft Australian Dietary Guidelines (2012), 'legumes provide a valuable and cost efficient source of protein, iron, some essential fatty acids, soluble and insoluble fibre and micronutrients'.<sup>25</sup>*

## What's to learn from legumes?

- Higher intake of legumes by older people has been reported to be the most protective dietary predictor of longevity.<sup>26</sup>
- Legumes have been shown to have favourable effects on blood sugar levels as well as total and LDL-cholesterol. Emerging evidence suggests they may improve satiety over the short term and weight loss over longer periods.<sup>27,28,29</sup>
- Diets rich in legumes may be an important component of dietary intervention for the prevention and management of CVD, diabetes, overweight and obesity.<sup>26–29</sup>

## Legumes and nutrition

- Most legumes are low GI.<sup>19</sup>
- Legumes contain approximately twice the protein of cereal grains.<sup>15</sup>
- Legumes contain all three important types of fibre: insoluble fibre, soluble fibre and resistant starch.<sup>30</sup>
- Most legumes are low in total and saturated fat.<sup>15</sup>
- They contain a variety of antioxidants, vitamins and minerals.<sup>31</sup>
- They are low in sodium. (The sodium content of canned legumes can be reduced by up to 41% if the product is drained and rinsed.<sup>32</sup>)

## Cooking with legumes

- Legumes readily absorb flavours which makes them an excellent addition to main dishes, soups, salads, snacks and as flour to baked goods.
- Dry beans, whole peas and chickpeas must be soaked prior to cooking because their skins do not readily absorb water. Dry lentils and split peas don't need to be soaked prior to cooking.
- To soak legumes add 3 cups of water for every 1 cup of dry legumes and then let stand for 6–8 hours or overnight. Rinse the legumes before boiling.
- Canned legumes can easily be added to a variety of dishes and are an excellent alternative to dried legumes. Remember to drain and rinse canned legumes to reduce sodium content.

For more information on legumes, or to download a copy of our factsheets 'Lifting the Lid on Legumes' and 'Tips and tricks to enjoying legumes more often' visit the Grains & Legumes Nutrition Council website:  
**[www.glnc.org.au](http://www.glnc.org.au)**

# Chickpeas

*Australia is the world's leading chickpea exporter, principally of the desi chickpea with 90% of Australian chickpeas exported. Chickpeas are grown in all mainland states of Australia and production has increased from 110,000 tonnes in 2006 to 403,000 tonnes in 2011.*<sup>34</sup>

## Did you know?

- The name 'chickpea' came from the chicken beak-like-looking part of the seed.<sup>34</sup>
- Fresh green chickpeas can be eaten as a vegetable.

There are two groups of chickpea which are distinguished by seed size, shape and colour:<sup>31</sup>

- **Kabuli chickpeas** are large, round, white to cream coloured and have a nutty flavour.
- **Desi chickpeas** are smaller and wrinkled in appearance. They may be brown, light brown, yellow, orange, black or green and are usually sold dehulled and split resembling a split pea.

## Cooking tips

- Mostly consumed in the form of whole seed, dhal or as flour (besan).
- Soak for 6–8 hours, drain and boil in fresh water for 20–30 minutes.
- Add to salads, soups and casseroles.



| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 19.3g     |
| Fat              | 6.1 g     |
| Saturated fat    | 0.6g      |
| Carbohydrate*    | 45.9g     |
| Dietary fibre*   | 10.8g     |
| Insoluble fibre* | 7.5g      |
| Soluble fibre*   | 3.3g      |
| Folate           | 557 µg    |
| Calcium          | 105mg     |
| Iron             | 6.2mg     |
| Magnesium        | 115mg     |
| Phosphorous      | 318mg     |
| Potassium        | 875mg     |
| Zinc             | 3.4mg     |

## Sources

USDA National Nutrient Database for Standard Reference, Release 23. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.





## Crispy chickpea snack

**Serves:** 6 as a snack

**Preparation time:** 5 minutes

**Cooking time:** 10 minutes

### Ingredients

400 g can of chickpeas,  
drained and rinsed

Canola oil spray

1 teaspoon Cajun seasoning

### Method

1. Place drained chickpeas onto paper towel and pat dry.
2. Spoon chickpeas onto a baking tray and spray well with oil.
3. Bake in a preheated oven at 220 °C for 10 minutes. Remove from oven and sprinkle lightly with Cajun seasoning.

### Nutrition information per serve

Energy 409kJ, Protein 4.2g, Fat 4.5g,  
Saturated fat 0.3g, Carbohydrate 10.2g,  
Fibre 3.2g, Sodium 190mg

# Faba beans

*The faba bean (fava bean) originated in the Middle East and is currently the sixth most produced legume worldwide. Australia is among the top five producers of faba bean in the world and is the leading exporter. In 2011 Australia produced 286,100 tonnes of which more than 80% was exported primarily to the Middle East.* <sup>31,33</sup>

## Did you know?

- There are two types of faba bean which differ in size, *Vicia faba major* (broad bean) and the *Vicia faba minor* (horse bean, tick bean). <sup>31</sup>
- The faba bean is round to oval in shape and usually flattened.

## Cooking tips

- Soak dry faba beans prior to cooking.
- To cook faba beans, add 1 cup of dry beans to 2–3 cups of water, bring to the boil and simmer for 1–1½ hours.
- Faba beans taste great in a wide range of meals and foods including soups, salads and baked goods.
- Faba beans can also be roasted or sprouted and eaten as a snack food.
- Fresh faba beans (broad beans) can be cooked by removing the beans from the pod, boiling for a few minutes and then removing the bean from the casing.
- Canned faba beans are available in specialist delis and supermarkets.



| Nutrient      | per 100 g |
|---------------|-----------|
| Protein       | 26.1 g    |
| Fat           | 1.5 g     |
| Saturated fat | 0.3 g     |
| Carbohydrate  | 58.3 g    |
| Dietary fibre | 25 g      |
| Folate        | 423 µg    |
| Calcium       | 103 mg    |
| Iron          | 6.7 mg    |
| Magnesium     | 192 mg    |
| Phosphorous   | 421 mg    |
| Potassium     | 1062 mg   |
| Zinc          | 3.1 mg    |

### Sources

USDA National Nutrient Database for Standard Reference, Release 23. 2010.



## Faba bean salad

**Serves:** 6

**Preparation time:** 5 minutes

**Cooking time:** none

### Ingredients

- 2 x 420g cans faba beans, drained and rinsed
- 1 medium tomato, chopped
- ¼ cup fresh chopped parsley
- 3 tablespoons red wine vinegar
- 2 tablespoons olive oil
- 1 teaspoon dried oregano
- ½ teaspoon crushed red chilli
- ½ teaspoon black pepper
- ¼ teaspoon salt

### Method

1. In a medium size serving bowl, combine all ingredients.
2. Toss gently and serve. Makes a colourful addition to a barbecue.

### Nutrition information per serve

Energy 408kJ, Protein 3.3g, Fat 4.8g,  
Saturated fat 0.7g, Carbohydrate 10.9g,  
Fibre 3.1g, Sodium 135mg

# Field peas

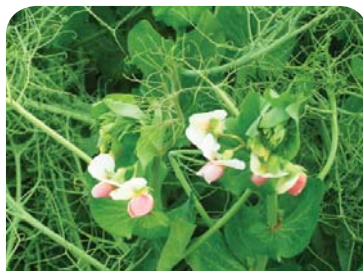
*The field pea is one of the first crops domesticated by humans. More than 90% of the peas produced in Australia are the Dun type, which are a round dimpled seed ranging in colour from greenish brown to brown. Current production in Australia is approximately 400,000 tonnes annually.<sup>33</sup>*

## Did you know?

- Australia is the leading producer and exporter of the Dun type of field pea worldwide.
- The green pea eaten as a vegetable is the immature form of field peas.

## Cooking tips

- Dried whole or split peas are excellent in soups.
- To cook field peas add 1 cup of dried peas to 2–3 cups of water.
- Split peas cook in 45–60 minutes without prior soaking.
- Whole dried peas take longer to cook (60 minutes). Soaking for 6–8 hours reduces the cooking time to 30–40 minutes.
- Field peas can be roasted to make a crunchy snack.



| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 23 g      |
| Fat              | 2 g       |
| Saturated fat    | 0.3 g     |
| Carbohydrate*    | 45.6 g    |
| Dietary fibre*   | 13 g      |
| Insoluble fibre* | 9.4 g     |
| Soluble fibre*   | 3.6 g     |
| Folate           | 274 µg    |
| Calcium          | 42 mg     |
| Iron             | 3.8 mg    |
| Magnesium        | 95 mg     |
| Phosphorous      | 330 mg    |
| Potassium        | 930 mg    |
| Zinc             | 2.5 mg    |

## Sources

NUTTAB. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.





## Traditional pea and ham soup

**Serves:** 6

**Preparation time:** 15 minutes

**Cooking time:** 1½ hours

### Ingredients

500 g dry green split peas  
or yellow split peas  
3 carrots, diced  
3 celery sticks, diced  
1 large onion, diced  
2 cloves garlic, finely sliced  
1 smoked ham hock  
1 low-salt chicken stock cube  
12 cups water  
1 bay leaf

### Method

1. Combine all ingredients in a large pot. Cover and simmer for approximately 1–1½ hours or until thickened, stirring occasionally.
2. Discard bay leaf and remove hock. Cut the skin from the hock and discard. Remove the ham from the bone, dice and set aside.
3. Puree soup in a food processor or blender.
4. Add ham back into pureed soup and stir through.
5. Garnish with parsley if desired.

### Nutrition information per serve

Energy 758kJ, Protein 14.9g, Fat 2.9g,  
Saturated fat 0.8g, Carbohydrate 24.4g,  
Fibre 5.3g, Sodium 427 mg

# Lentils

*The lentil is one of the oldest known food crops. In 2008 Australia was ranked as the world's third largest exporter of lentils behind Canada and the USA. Virtually the entire Australian lentil crop is red lentil.*<sup>33</sup>

## Did you know?

Ancient Egyptians thought that lentils made children's minds more aware, making them scholarly and good-humoured.<sup>34</sup>

There are two main types of lentils grown in Australia.

1. **Red lentil** (*microsperma*) has round seeds. The seed pod is removed and the distinctive orange/red cotyledon or kernel is eaten.
2. **Green lentil** (*macrosperma*) has a larger flattened seed. The seed coat ranges in colour from green to brown and has yellow cotyledons. They are also referred to as brown, yellow, Chilean or continental lentils.

## Cooking tips

- Lentils don't need to be soaked prior to cooking.
- To cook add 1 cup of dry lentils to 2–3 cups of water, bring to boil and simmer until ready.
- Red lentils cook in around 10–15 minutes.
- Cook green lentils for 30–40 minutes.
- Lentils are consumed whole in many traditional ethnic dishes (curries, as dhal and lentil soup).
- Lentil flour can be used to make a variety of foods.
- Immature pods and sprouted seeds may also be eaten as a vegetable.



| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 24.2g     |
| Fat              | 2g        |
| Saturated fat    | 0.3g      |
| Carbohydrate*    | 48.5g     |
| Dietary fibre*   | 4.8g      |
| Insoluble fibre* | 3.5g      |
| Soluble fibre*   | 1.3g      |
| Folate           | 111 µg    |
| Calcium          | 73mg      |
| Iron             | 7.5mg     |
| Magnesium        | 82mg      |
| Phosphorous      | 340mg     |
| Potassium        | 840mg     |
| Zinc             | 3mg       |

### Sources

NUTTAB. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.



## Moroccan red lentil and chickpea soup

**Serves:** 6

**Preparation time:** 15 minutes

**Cooking time:** 1½–2 hours

### Ingredients

2 tablespoons olive oil  
400g lean beef or lamb, cubed  
1 large onion, finely diced  
¾ cup dried chickpeas  
2 litres salt reduced chicken stock or water  
¾ cup dried red lentils  
¼ cup long grain rice  
1 red capsicum, deseeded, finely diced  
2 carrots, finely diced  
2 x 400g cans salt reduced crushed tomatoes  
2 tablespoons tomato paste  
1 tablespoons ground cinnamon  
1 bunch coriander, chopped  
Black pepper, to taste

### Method

1. Heat oil and add meat. Cook until lightly browned. Add onion and cook until softened.
2. Add the chick peas and stock or water and bring to the boil, then simmer for 1–1½ hours, until the chickpeas are tender.
3. Add the remaining ingredients, except the coriander. Simmer, stirring often, for 30 minutes or until all ingredients are tender.
4. To serve, stir in chopped coriander and season to taste.

### TASTY TWIST

*Reduce stock by half to produce a thick consistency and serve as a tasty filling in wraps for lunch.*

### Nutrition information per serve

Energy 1490kJ, Protein 25.8g, Fat 12.8g,  
Saturated fat 2.8g, Carbohydrate 30.1g,  
Fibre 9.3g, Sodium 330mg

# Lupins

*The Australian Sweet Lupin (ASL) and the Albus Lupin are the two types of lupin produced in Australia. The lupin crop represents Australia's largest legume crop produced each year and in 2011 Australia produced over 900,000 tonnes. Western Australia produces 85% of the world's lupin supply.* <sup>31,33,35</sup>

## Did you know?

Lupins are an attractive alternative to dry beans and soy beans. Lupins contain very little digestible carbohydrate so lupin flour can be added to wheat flour to lower the GI. In addition, the protein and oil in lupin seeds is more readily digested and they have lower phytate content. <sup>31</sup>

There are two main types of lupin grown in Australia:

1. **Australian Sweet Lupin (ASL)** has a round seed with a yellow speckled pigment.
2. **Albus Lupin** has a white seed with a flattened and oval shape.

## Cooking tips

- Immature seeds have a similar taste and texture to field peas and can be used as a salad vegetable, in stir fries or for pickling.
- Soak prior to cooking.
- To cook, add 1 cup of dry lupins to 2–3 cups of water, bring to the boil and simmer for 1–1½ hours.
- Lupin flour can easily be used to prepare foods similar to wheat foods, such as bread, cakes and muffins by substituting 5–20% wheat flour with lupin flour in the recipe.
- Lupin flour is available online or from health food shops.



| Nutrient      | per 100 g     |
|---------------|---------------|
| Protein       | 40g           |
| Fat           | 7 g           |
| Carbohydrate  | less than 2 g |
| Dietary fibre | 37 g          |
| Folate*       | 355µg         |
| Calcium*      | 176mg         |
| Iron*         | 4.4mg         |
| Magnesium*    | 198mg         |
| Phosphorous*  | 440mg         |
| Potassium*    | 846mg         |
| Zinc*         | 2.8mg         |

### Sources

Government of Western Australia:  
Department of Agriculture and Food.  
*Australian Sweet Lupin*. 2008.

\* USDA National Nutrient Database for  
Standard Reference, Release 23. 2010.





## Blueberry and vanilla lupin flour muffins

**Makes:** 12

**Preparation time:** 15 minutes

**Cooking time:** 25 minutes

### Ingredients

2 cups (320g) wholemeal plain flour

½ cup (50g) lupin flour

3 teaspoons baking powder

¾ cup (155g) raw caster sugar

1 egg

½ cup canola oil

1 cup buttermilk or reduced fat  
Greek yoghurt

1½ teaspoons vanilla extract

1 cup (150g) frozen blueberries

### Method

1. Preheat oven to 180°C and grease a 12-hole ⅓ cup capacity muffin pan.
2. Sift wholemeal plain flour, lupin flour and baking powder into a bowl. Return bran husks into the flour. Stir in sugar and blueberries. Stir to combine. Make a well in the centre.
3. Combine buttermilk, eggs, vanilla and oil in a jug. Pour over flour mixture. Add blueberries. Stir until just combined.
4. Divide blueberry mixture among muffin pans. Bake for 25 minutes or until golden and cooked through. Stand in the pan for 5 minutes. Turn out onto a wire rack to cool. Serve warm or at room temperature.

### TASTY TWIST

*Add some ground cinnamon or mixed spice and ¼ cup chopped pistachios.*

### Nutrition information per serve

Energy 1020kJ, Protein 5.6g, Fat 10.9g,  
Saturated fat 1.1g, Carbohydrate 30.4g,  
Fibre 4.5g, Sodium 327mg



# Mung beans

*The mung bean is native to the Indo–Burma region and is used as a food and an ingredient in both savoury and sweet dishes around the world. India, Burma, Thailand and Indonesia produce almost 90% of the world's mung beans.*<sup>33</sup>

*Australia's exportation of mung beans has increased four fold over the past five years with Queensland being the major producer of exported mung beans.*<sup>33</sup>

## Did you know?

- Mung beans are one of the types of bean sprouts found in supermarkets and green grocers.
- The mung bean is egg shaped and generally green in colour.

## Cooking tips

- Mung beans don't require soaking before cooking.
- To cook mung beans add 1 cup of dry beans to 2–3 cups of water, bring to boil then simmer for 20–30 minutes.
- Mung bean flour can be used to make bread or pasta such as vermicelli and spaghetti.
- Mung beans can also be sprouted and consumed raw or cooked, and are a great addition to stir fries and salads.

## TIP

*Eating mung beans (or any legume) with a source of vitamin C will help absorb more iron into the body.*



| Nutrient         | per 100 g |
|------------------|-----------|
| Protein          | 23.9g     |
| Fat              | 1.1 g     |
| Saturated fat    | 0.3g      |
| Carbohydrate*    | 42.3g     |
| Dietary fibre*   | 10g       |
| Insoluble fibre* | 2.8g      |
| Soluble fibre*   | 7.2g      |
| Folate           | 625µg     |
| Calcium          | 132mg     |
| Iron             | 6.7mg     |
| Magnesium        | 189mg     |
| Phosphorous      | 367mg     |
| Potassium        | 1246mg    |
| Zinc             | 2.7mg     |

## Sources

USDA National Nutrient Database for Standard Reference, Release 23. 2010.

\* Sugars, starch and fibre in New Zealand foods. Palmerston North, NZ: NZ Institute of Crop & Food Research; 1999.



## Mung bean dip

**Serves:** 8

**Preparation time:** 10 minutes

**Cooking time:** 20 minutes

### Ingredients

1 cup (110g) dried mung beans  
 4 cups boiling water  
 ¼ cup olive oil  
 2 garlic cloves, crushed  
 1 green onion, finely sliced  
 1 cup fresh coriander leaves  
 2 tablespoons tahini  
 ⅓ cup fresh lemon juice  
 2 tablespoons water  
 2 teaspoons Moroccan spice mix  
 Toasted wholemeal pita bread or vegetable crudité, to serve

### Method

1. Place beans in a large saucepan of boiling water. Bring to a boil, then reduce heat to low. Cover and cook for 20 minutes or until beans are soft and fluffy.
2. Meanwhile, heat oil in a saucepan over medium heat. Add onions and garlic and cook for 1 minute. Set aside to cool.
3. Transfer the beans to a food processor. Add cooled onion mixture (including oil), coriander, tahini, lemon juice, water and Moroccan spice. Puree until smooth. If a little thick add a little more water or lemon juice.
4. Serve with toasted wholemeal pita bread, or vegetable crudité.

### Nutrition information per serve

Energy 621 kJ, Protein 4.6g, Fat 10.5g,  
 Saturated fat 1.5g, Carbohydrate 9.7g,  
 Fibre 3.5g, Sodium 8mg

## More information and resources

For more information and a range of downloadable resources call 1300 472 467 or visit [www.glnc.org.au](http://www.glnc.org.au)

While you are there subscribe to GLNC e-news to keep up-to-date with bi-monthly updates of the latest scientific research findings on grains and legumes.

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