PIONEER® BRAND
MAIZE GRAIN
THE HIGH PERFORMANCE FEED

A 100% NZ FAMILY OWNED & MANAGED AGRIBUSINESS

PIONEER
BRAND · PRODUCTS
Waikato farmers Wynn and Tracy Brown have seen the benefits of feeding kibbled maize grain to their 700-cow herd over the past three seasons.

“Maize grain provides high levels of energy and starch, and it is a great combination with high protein spring pasture,” says Wynn. “It helps to keep production up and reduces the amount of weight our cows lose in early lactation.”

Maize grain has also helped the Browns increase cow conception rates. “We do four weeks of artificial breeding each year,” says Wynn. “We used to get 140-150 replacements but now we are feeding maize grain we are getting 180-200 in the same time.”

The Browns feed about 200 tonnes of kibbled maize grain in the shed from calving through to mid-December each year. It is purchased in 12 tonne lots and stored in a silo close to the milking shed. Individual cows receive 1–3.5 kg per day depending on their production level.

“Maize grain is a good, simple natural product which is locally grown and competitively priced,” says Wynn. “It is consistently high in quality so we always know exactly what we are feeding.”
High performance cows need high performance fuel. That’s why a growing number of leading farmers are feeding their herds maize grain.

Packed with high energy starch, maize grain can lift milk yields and protein content, increasing the size of your milk cheque this season.

Convenient and easy to use, processed maize grain can be ordered when you need it and fed either in bins or through in-shed meal feeding systems.

This booklet outlines the benefits of feeding maize grain. For more information call 0800 PIONEER (746 633) to arrange a free, no-obligation visit from your local Pioneer Representative.

Choose the cost effective, high performance feed this season.

PIONEER® BRAND MAIZE GRAIN FOR DAIRY COWS MANUAL

The Pioneer brand Maize Grain for Dairy Cows Manual covers more detail on nutritional, environmental and economic benefits, as well as feeding guidelines.

To receive your complimentary copy visit www.pioneer.nz.
HIGH ENERGY FEED

Maize has a higher energy content than other grains and many other commonly available concentrates. It can be used to increase cow energy intakes, delivering more milk™ or faster condition score gains.

![Typical Concentrate Energy Content](chart.png)

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High energy processed maize grain.

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1Holmes et al. 2003. Milk Production from pasture. Massey University, NZ.
INCREASES MILK PROTEIN PRODUCTION

Information published by DairyNZ shows that milk production is determined by the amount of energy a cow eats but the composition of the milksolids she produces is affected by the type of supplement fed.3

- When cows are fed a starch or sugar-based supplement they produce more milk protein.
- When cows are fed a fibre based supplement they produce more milk fat.

Since milk protein is worth two to three times more than milk fat, starch and sugar based supplements will deliver more milk revenue than fibre-based supplements.

Table 1: Estimated milk revenue from feeding one tonne drymatter of different supplements fed through an in-shed feeding system3

<table>
<thead>
<tr>
<th>Feed</th>
<th>% of extra milksolids is:</th>
<th>Estimated milk revenue at $5.50/kgMS</th>
<th>Estimated milk revenue at $6.50/kgMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fat</td>
<td>Protein</td>
<td></td>
</tr>
<tr>
<td>PKE</td>
<td>75</td>
<td>25</td>
<td>$370</td>
</tr>
<tr>
<td>Barley</td>
<td>25</td>
<td>75</td>
<td>$570</td>
</tr>
<tr>
<td>Maize grain</td>
<td>20</td>
<td>80</td>
<td>$675</td>
</tr>
</tbody>
</table>

3Adapted from Roche and Hedley, 2011. Supplements – the facts to help improve your bottom line. DairyNZ Technical Series July, 2011 p 6-10. Assumes grazing residuals of 1,500-1,600 kgDM (7-8 clicks on RPM). Responses decline when residuals are higher than 1,600 kgDM (i.e. cows are better fed). For a full list of assumptions see http://www.dairynz.co.nz/file/fileid/37671.
As well as containing more energy than other concentrates (e.g. dairy meal & other grains), maize grain has the following advantages for rumen health:

- It has a high starch content but virtually no soluble sugar.
- Maize starch is less rapidly broken down in the rumen than other starch types.

This means there is a lower risk of grain overload (acidosis) when feeding maize grain compared to other grains (e.g. wheat) or high sugar feeds (e.g. molasses).

### Rumen degradability of maize vs. wheat grain

![Rumen degradation graph](image)

**Processing maize grain**

To maximise feed value maize grain must be processed (rolled or ground) either on farm or prior to purchase. Processed maize grain will retain its quality for up to 4 weeks when stored in a clean, dry place.

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FEEDING GUIDELINES

Milkers and Dry Cows

Table 2 below details how maize grain can be used for milkers and dry cows.

**Table 2**

<table>
<thead>
<tr>
<th>Feed maize grain to:</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill feed deficits and increase energy intakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Increase milk protein levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Increase cow condition score</td>
<td></td>
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<tr>
<td>Dilute dietary protein levels</td>
<td></td>
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<tr>
<td>decreasing urinary nitrogen output</td>
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</table>

**Calves and young stock**

Fed in conjunction with a protein source (e.g. leafy pasture), maize grain is an ideal supplement for calves and young stock promoting rapid rumen development and excellent liveweight gains.

**Feeding rates**

Maize grain feeding rates will vary depending on the age and production level of livestock and the amount, and type, of other feeds in the diet.

General recommendations are:

- Feed a maximum of 30% of the total drymatter intake as maize grain.\(^5\)
- Start at lower rates e.g. 1 kg maize grain per cow per day and increase feeding rates gradually over 7-10 days.
- Feed a maximum of 2.5 kgDM maize grain in a single feed.

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\(^5\)Feeding rates will be lower in diets that contain other sources of carbohydrate (e.g. other grains or meals, molasses or high sugar or starch byproducts). Talk to your local farm consultant or nutritionist for farm specific advice.