# **GREAT FOR YOUR FARM** SYSTEM **AND PROFIT**

Maize silage is a proven supplement and the ideal partner to New Zealand's pasture-based dairy farm feed systems.

## More feed per hectare

One of the biggest drivers of on-farm profitability is the amount of feed harvested from every hectare. Because it is a forage, maize silage feeding levels can be altered to manipulate pasture cover preventing under or overgrazing and keeping pasture in the most active phase of its growth curve.







MAIZE SILAGE GRI YOUR FARM SYSTEM AND

#### Grow more pasture

The key to maximising pasture yield is to keep the pasture sward in its most active growth phase by avoiding under or over grazing. If pasture is in danger of over grazing, stored maize silage can be fed out at any time to allow pasture recovery.

Figure 1: Using maize silage to manipulate pasture growth rates



# Get more from a hectare of maize

Maize silage yields are high and local research shows they are increasing each year. Growing a maize silage crop is a great way to get more drymatter off your lowest producing pasture paddocks. Alternatively dedicate an area of your farm to forage production and you will find that the combination of maize silage plus a winter annual crop can produce more than double the yield of a typical pasture paddock<sup>1</sup>. Pasture persistence is a continued challenge and grazing too soon and too hard is thought to be a contributing factor. Feeding maize silage can help prevent overgrazing extending the life of your pasture sward.

**Pasture cover levels too high (>3000 kgDM/ha)**. Reduce maize silage feeding rate to increase grazing pressure or plant maize silage on farm

**Optimum pasture cover levels.** Vary maize silage feeding rate to maintain the desired rotation length

Pasture residual levels too low (<1500 -1600 kgDM/ha). Increase maize silage feeding rate to decrease grazing pressure

**Figure 2:** Annual drymatter yields from maize silage followed by a winter crop<sup>1</sup>



\* Trial did not include a pasture treatment



# Establish new, higher yielding pastures

Research has shown that the highest yielding paddocks on a dairy farm will produce twice as much drymatter as the lowest yielding paddocks<sup>2</sup>. Growing a maize crop is an important part of a successful pasture renewal program as it reduces the level of weeds, insect pests and carryover ryegrass seed.

Table 1: Home-grown maize silage drymatter and energy cost 2020-21<sup>3</sup>

		Maize silage drymatter costs							
		Low fertility paddock		High fertility paddock					
	tDM/ha	Maize silage cost per kgDM in the stack (c/kgDM)	Maize silage cost per MJME (c/kgDM)	Maize silage cost per kgDM in the stack (c/kgDM)	Maize silage cost per MJME (c/kgDM)				
Maize silage yield (tDM) in the stack	16	25.5	2.36	-	-				
	18	22.6	2.10	17.9	1.66				
	20	20.4	1.89	16.1	1.49				
	22	18.5	1.72	14.6	1.36				
	24	17.0	1.57	13.4	1.24				
	26	15.7	1.45	12.4	1.15				
	28	14.6	1.35	11.5	1.06				
	30	-	-	10.7	0.99				



## **Control feed costs**

Whether you are growing a crop on the milking platform or run-off or buying it in, maize silage is a great way to control your supplementary feed costs.

#### Grow it yourself

Maize produces high drymatter yields and this means plenty of feed at a cost-effective price. Most dairy farmers can grow maize silage onfarm without the need for additional fertiliser, making the cost even lower.

# Buy it in

Most traded maize silage is sold as a standing crop and is contracted prior to planting in the spring. While the cost of buying in maize silage varies slightly between regions, it is typically in the range 30 to 40 c/kgDM in the stack. This compares favourably with the cost per kgDM or per unit of energy of bought-in dairy meal blends.

Table 2: Cost of bought in maize silage compared to other commonly available supplements

Feed	Cost per unit (delivered)	Drymatter cost (c/kgDM)	Energy content (MJME/kgDM)	Energy cost (c/MJME)
Maize silage (bought in)*	-	30-40	10.8	2.8-3.7
Typical dairy meal blend	\$450-\$550/tonne**	51-63	11.0	4.6-5.7

\*The price of bought in maize silage varies between regions and seasons. For up-to-date information on the price of bought in maize silage, contact your local maize silage supplier \*\*Based on typical feed value and price

## Keep a stack ahead of you

Provided it is well compacted and covered, maize silage can be stored on farm for months and even years without any loss in feed quality. The interest cost of carrying over maize silage is around lc/kgDM per year.

Figure 3: shows the spot price for PKE has varied between 22 and 44c/kgDM during the past nine seasons<sup>4</sup>







Maize silage on hand can be fed exactly when needed (no waiting for a delivery or having to feed it to fulfill a contract) and you can avoid the price volatility associated with buying feed on the spot market.

# Feed it when you need it

Grazed crops must be fed when they are ready regardless of whether the extra feed is needed, maize silage can be stored and fed when it is needed the most. This allows pasture cover levels to be manipulated and maize silage to be fed when it will generate the most economic response.

# Maximise your response rate

DairyNZ research shows that the profitability of feeding supplement depends on the supplement price, the milk price and the milk response per unit of energy in the supplement<sup>5</sup>.

The milk response decreases significantly when the cow is well fed on pasture (i.e. post-grazing residuals are greater than 1500-1600 kgDM/ha).

In spring, feeding out supplements is much less profitable when there is enough pasture. This is because the pasture left behind is often wasted. High spring pasture levels can also result in a loss of feed quality. In autumn, supplements can be used to build cover and in these cases it can be profitable to feed supplements even when you have enough pasture.

With maize silage the message is simple - if you need it, feed it. If you don't need it, don't feed it.

## Move a feed wedge

Taking paddocks out of the grazing round and planting maize on farm reduces the size of the spring pasture surplus, allowing farmers to better control feed quality. The maize silage crop can be fed in the autumn to extend lactation length, put condition on cows and build pasture cover levels prior to the winter.

# Simple and proven

Many Kiwi farmers have been growing and feeding maize silage for more than 30 years. Trials conducted at Waimate West Research Station in the 1990's demonstrated the profitability of using maize silage and helped define the fundamentals of how to make it work in farm systems.





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