

Thousand-headed Kale and Chou Moellier

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THE successful growing of fodder crops has contributed in no small measure to the expansion of New Zealand's livestock industry. During the early stage of farming in the Dominion both dairy and sheep farmers found that at some periods of the year grass and grass supplements were not sufficient to ensure the maximum production of milk, meat, or wool, and they had to resort to growing fodder crops to supplement the lean periods of pasture growth. Many crops have been used from time to time, such as rape, turnips, maize, pumpkins, barley, carrots, silver beet, mangolds, and the kales. Some have retained popularity in restricted localities and some throughout both islands, whereas others have failed to hold a place.

NOT the least important of these feed crops are the kales. They include many types, some of which have proved valuable for special purposes while others have lost popularity altogether. The two most important types today are marrow-stem kale (chou moellier) and thousand-headed kale. Those of less importance which have gained no place of prominence are buda kale, rape kale, Maori cabbage, and hungry gap kale. The last-named is a late form of rape kale with very curly leaves, claimed to supply feed in late winter and early spring, but it is not so resistant to root rots as the two more popular types.

The first reference to the kales is comparatively recent, and some of the selections are the product of this century. Thousand-headed kale is of older standing than chou moellier—in fact it is one of its parents. The credit for first seeing the possible value of chou moellier as a supplementary feed crop goes to Garton of England. Its early name of "French kale" may be misleading, though it is thought to have originated in France from a cross between thousand-headed kale and kohlrabi. It was introduced to commerce about 1907.

Increasing Area

The first mention of kales in New Zealand was in 1910, since when their use has continually expanded. It is significant that in recent years the area sown in turnips has shown a decided decrease, whereas the area devoted to the kales has gradually increased. During the same period the area in rape has remained relatively constant at about 150,000 acres. Today the kales account for 60,000 to 70,000 acres annually, of which about four-fifths is chou moellier.

The smaller area in chou moellier does not mean that it is of less importance than rape, but it has proved of greater value to the

dairy farmer than to the sheep farmer. Chou moellier is an equally important crop in the North and South Islands.

Value as Fodder Crop

With the area planted in chou moellier extending persistently it was natural that its value as a fodder crop should receive the attention of research workers in New Zealand. Trials have been carried out by the Department of Agriculture since 1911-12 and by the Department of Scientific and Industrial Research since 1934-35. Breeding and selection work begun by Calder has resulted in the introduction to commerce of two distinct types of chou moellier (the giant selection and the medium-stemmed selection) and a selected strain of thousand-headed kale.

The following figures of the relative leaf and stem production and nutritive value of the three types are those obtained by Calder during his selection work:—

Relative Green Weight Yields.	
Tall marrow-stem (giant)	100
Medium marrow-stem (medium stemmed)	81.1
Thousand-headed	72.8
Average Dry Matter Percentages.	
Tall marrow-stem (giant)	19.7
Medium marrow-stem (medium stemmed)	20.4
Thousand-headed	22.4
Relative Dry Matter Yields.	
Tall marrow-stem (giant)	100
Medium marrow-stem (medium stemmed)	86.4
Thousand-headed	81.8
Leaf to Stem Ratios.	
	lb. per Plot.
	Leaf. Stem.
Tall marrow-stem (giant)	13.6 21.4
Medium marrow-stem (medium stemmed)	13.3 15.1
Thousand-headed	18.0 7.5

These figures show the relative productive merits of each type and form a basis for consideration of the place of each in farm practice.



The budding of thousand-headed kale in August. This crop was sown thickly in ridges and was not thinned.

The fact that the giant type gives the highest total yield accounts for its popularity with the dairy farmer, especially in the more intensive dairying areas of the North Island, where the areas devoted to feed crops are small and this type suits local conditions and requirements.

The medium-stemmed type is more adaptable for feeding in the field and is favoured where larger areas are sown and where they are fed to sheep.

Thousand-headed kale is more extensively grown as a sheep feed, because of its higher production of leaf, and occasionally for early spring fodder for cows, as it stands well through the winter and produces its greatest bulk of growth in the second spring, being a safe fodder at that time.

CHOU MOELLIER (MARROW-STEM KALE).

The two distinct types of chou moellier, giant and medium stemmed, are grown for seed production in New Zealand under the supervision of the Department of Agriculture, such seed being marketed as Certified.

Soils and Climate

Being a member of the cabbage family, chou moellier is best suited to high-fertility soils. Undoubtedly the better crops are grown on first-class alluvial silts, in areas of higher rainfall—soils which also hold moisture