

# Canterbury Chamber of Commerce

## Agricultural Bulletin

# COCKSFOOT FOR PASTURE AND SEED

Prepared by Canterbury Agricultural College, Lincoln.

BULLETIN

CHRISTCHURCH, MAY, 1932

No. 35

During the past two or three years the merits of true perennial ryegrass has been absorbing nearly all the attention devoted to grassing problems, and there is a danger that the value of cocksfoot for some special purposes may have been overlooked. While it is recognised that ryegrass will always be by far our most important grass, yet there are for cocksfoot three special spheres of utilisation, namely, long rotation pasture, permanent pasture, and certified seed production.

### Long Rotation Pasture on Wheat Land.

It is intended here to consider that particular class of land that grows wheat crops above the average, and where it now pays, and probably always will pay, to grow wheat occasionally rather than keep the land in permanent pasture. Even on such farms some fields in permanent pasture are profitable, and these will, in future, probably be sown in certified ryegrass to cut for seed, until grass grub or weeds such as hair grass and goose grass make ploughing a necessity. On that portion of the farm that constantly enters into the rotation of rape, wheat, oats, peas, etc., the mixture used will probably be Italian rye and red clover, definitely intended to stay down for one or two years. But between these definitely permanent and definitely temporary pastures there are, and probably always will be, great areas that are wanted primarily for grazing, but that are available for cropping when the occasion arises. These pastures are expected to last for three to six years, and form the typical long rotation pastures of the wheat country. In the seeds mixture for such lands, cocksfoot should always be included.

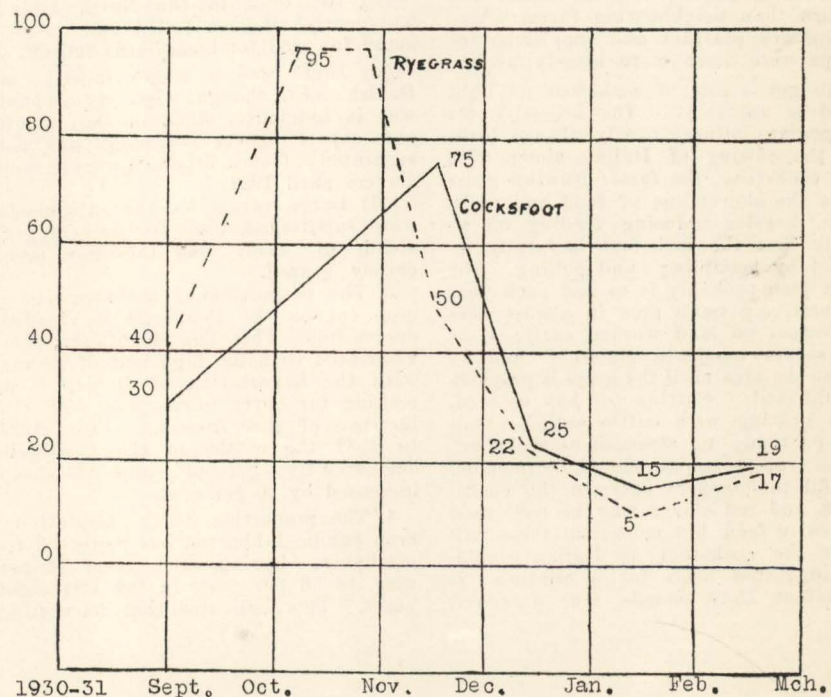
Of recent years the utilisation of cocksfoot for such pastures has been declining, chiefly owing to the temporary nature of much of the ryegrass seed on the market. When a field was sown in ryegrass and cocksfoot, the ryegrass died out in a year or two, and the field had to be ploughed up before the cocksfoot became established, so that the sowing of cocksfoot was a pure waste. Now, however, times have changed. True perennial ryegrass will not die out nearly so readily, but will hold its own for many years, and therefore cocksfoot will have time

to become an important ingredient in the pasture, and so should be included in the mixture if it can be shown to have any superiority over ryegrass from any point of view.

This point of view is provided by the continued growth of cocksfoot during dry spells, when the production of ryegrass falls away to almost nothing. At Canterbury Agricultural College on plots sown pure with grasses of all the common species there was a remarkable growth on the cocksfoot plot all through the recent drought, while ryegrass and all others were completely dormant. Even in the preceding season, 1930-31, the cocksfoot plot beat the ryegrass plot in production during all the period of autumn shortage, i.e., from November to March. The following graph shows the weighings from monthly cuttings, in pounds per plot.

In December, January, and February the superiority of cocksfoot when expressed as pounds per plot does not appear very great, but it actually amounts to an increase of about 200 per cent., and this at a time when the feed is of the greatest value. This capacity for cocksfoot to withstand long periods of drought is an exceedingly important character, as it often keeps stock in good autumn condition to withstand the hard winter months ahead. Moreover, cocksfoot withstands grass-grub, and shutting it up for hay or seed, instead of depressing, tends to increase its growth.

Cocksfoot and ryegrass require different treatment to get the best out of them. Ryegrass can be fed hard in spring and summer, but needs spelling in autumn. Cocksfoot needs longer intervals between the grazings in spring



It will be seen that in September and October cocksfoot was well below ryegrass, but that from that period until the cutting ceased it was always above the ryegrass level.

and summer so that it may produce growth for autumn and winter at the time when it is most needed. For this reason ryegrass-cocksfoot mixtures should be either predominantly ryegrass

grass or predominantly cocksfoot, so that the pasture may be managed to suit the dominant grass. A suggested basis for a mixture to produce a predominantly ryegrass pasture of good wheat land is true perennial ryegrass 30 pounds, cocksfoot 5 pounds, and red clover 4 pounds, and for a pasture that under suitable management would become predominantly cocksfoot, true perennial rye 15 pounds, cocksfoot 12 pounds, and red clover 4 pounds.

#### Permanent Pasture in Light Lands.

Between the wheat lands on the one hand, and the lightest Danthonia country on the other, there is a large area that is commonly sown in very short rotation pastures and then broken up for turnips or rape or a very occasional crop of oats. Some of this country pays best when it is covered with permanent cocksfoot pasture, especially when this is spelled sufficiently and at the proper times. In this period of low prices when it is essential to keep all costs of cultivation, seed, manure, etc., at a minimum, these cocksfoot pastures have shown to a great advantage. On several co-operating farms necessary advice from the Canterbury Agricultural College advisory service (see Bulletin No. 32) such permanent cocksfoot pastures are utilised. On one of these farms on light shingle plains land, where three-quarters of the farm is predominantly cocksfoot, controlled grazing of it has made possible an increase of 30 per cent. in the sheep carried between 1929 and 1931. Also on these pastures, under proper management, 72 per cent. of the lambs have been fattened off their mothers. This farm showed a much better net return than neighbouring farms where temporary pastures and supplementary crops were much more largely used.

To get a sole of cocksfoot on light land is not easy. The necessity for immediate returns nearly always leads to the sowing of Italian along with the cocksfoot; the faster-growing grass robs the slower one of food and moisture, besides inducing feeding off so early that the cocksfoot is fatally injured by trampling and pulling. The best plan probably is to sow each year a relatively small area in almost pure cocksfoot on land worked early, so as to secure adequate moisture, and to nurse the area until the grass is properly established. Cutting for hay or seed, and grazing with cattle rather than sheep, tends to strengthen cocksfoot. Some true perennial should be included to fill the spaces between the cocksfoot, and red clover may be well used for early feed, but neither of these will hurt the cocksfoot as Italian would. A suggested basis for a mixture is cocksfoot 15-20 pounds, true perennial

rye 5-10 pounds, and red clover 4 pounds.

#### Cocksfoot for Seed.

Some information on the production of cocksfoot seed in New Zealand is given in the following table:—

Year.	N.Z. acres.	Canterbury Acres.	Percentages of Area Cut in			
			Peninsula %	Ashburton County %	All other Counties %	
Average—						
1910-14	34,000					
Average—						
1916-24	14,000	12,000	82	11		7
1925	12,000	11,400	80	14		6
1926	10,000	9,200	78	16		6
1927	10,000	8,900	76	20		4
1928	11,000	9,900	74	21		5
1929	11,000	10,400	67	25		8
1930	12,000	11,200	65	29		6
1931	14,000	12,700	57	36		7
Average of last 7 yrs.	11,340	10,530	71	23		6

The table shows that:

1. Ninety-two per cent. of all the cocksfoot cut in New Zealand comes from Canterbury.

2. The annual area cut before the war was about 35,000 acres, but has since declined to less than half. The great decline from 1916 on has been due to at least four factors, though what proportion each bears to the whole cannot be determined.

(a) The rise in the cost of labour for cutting cocksfoot by hand, together with the rise in the price of sheep and cow products made other energies than cocksfoot-cutting more profitable.

(b) The bush in the North Island had nearly all been felled and the demand for seed for bush burns fell off.

(c) There was a large import of Danish seed, though what its amount was is indefinite, since in the import and export figures cocksfoot was not separated from other grasses and clovers until 1928.

(d) Large farms on the Peninsula were subdivided, used for dairying instead of beef, and therefore more closely grazed.

3. The proportion of the Canterbury crop cut on the Peninsula is steadily decreasing. This has doubtless been associated with the high cost of labour, with the importation of Danish seed, making for lower prices, and with the increase of sheepfarming. From 1925 to 1931 the cattle on the Peninsula decreased by 5 per cent., while the sheep increased by 20 per cent.

4. The proportion of the Canterbury crop cut in Ashburton has increased remarkably, having risen from 14 per cent. to 36 per cent. in the last eight years. This indicates that harvesting

cocksfoot by machines has been relatively profitable even at current prices.

5. The proportion cut in all the other counties of Canterbury has remained constant. There are many areas outside Ashburton County, quite suitable for cocksfoot growing, and this might be suggested as a possible source of revenue in several districts. The average yield of seed for the whole of Canterbury during the last eight years has been 170 pounds per acre.

#### Export of Cocksfoot Seed.

The researches at Lincoln College and at the Plant Research Station, Palmerston North, show that Danish seed is inferior in leaf production to the Akaroa seed for New Zealand conditions, and the work of Professor Stapledon at Aberystwyth in Wales, has brought Akaroa cocksfoot prominently before European grass farmers. In the Scottish Journal of Agriculture for January, 1932, he said: "Akaroa cocksfoot is supremely useful in this country (Britain), while few of the Scandinavian pedigree strains are preferable to the ordinary seed of commerce." Thanks to these investigations, the import of foreign seed into New Zealand has practically stopped, while there are signs of an export trade being developed. Taking the figures since the trade returns have separated cocksfoot from other grasses and clovers, we have:—

#### Cocksfoot Seed.

Year.	Produced in New Zealand.		
	Tons.	Ex-ported. Tons.	Im-ported. Tons.
1928	850	37	457
1929	900	59	210
1930	910	33	11
1931	1,180	148	3

The Department of Agriculture has started a certification scheme for New Zealand cocksfoot, and it is placing on each sack a certificate that the contents are New Zealand permanent pasture cocksfoot seed.

This will give exporters a chance to take advantage of the propaganda of Professor Stapledon, and will probably secure a better price on the foreign market.

It would be highly advantageous if the information that there is certified New Zealand seed available were rapidly and widely disseminated among merchants overseas, so that the tide might be taken at the flood. It is stated that the Danes are already importing New Zealand seed, growing it in Denmark, and selling it as once grown Akaroa.

Copies of this Bulletin may be obtained from the secretary, Canterbury Chamber of Commerce, P.O. Box 187, Christchurch.