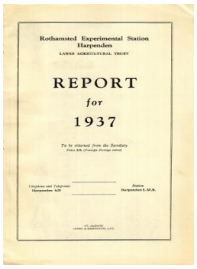
ROTHAMSTED RESEARCH

Report for 1937

Full Table of Content



Pyrethrum

Rothamsted Research

Rothamsted Research (1938) *Pyrethrum ;* Report For 1937, pp 51 - 52 **- DOI: https://doi.org/10.23637/ERADOC-1-69**

place. The resulting seed was, therefore, no longer the pure Dorinni but a back cross, Golden Bantam having been one of the parents of Dorinni. This new strain, which we call Rothamsted Sweet Corn, is now being grown under a variety of conditions.

Soya Beans

In the spring of 1934 two varieties were planted, Manitoba Brown and Mandarin; the former being a semi-dwarf, early maturing, brown-seeded variety, developed at the Manitoba Agricultural College, while the latter is a medium sized variety with yellow seeds, much later in maturing.

Manitoba Brown ripened satisfactorily but Mandarin did not. It was, therefore, discarded.

In 1935 three other varieties were sown in addition to Manitoba Brown, namely, The Jap, an early maturing dwarf plant with pale green seeds; J. Yellow, a late maturing plant with yellow seeds; and Black, a medium sized plant with black seed coming later than Manitoba Brown. Frosts in the middle of May severely checked all four varieties but the plants recovered later and gave a fair yield. Manitoba Brown and Jap came out best, followed by Black but J. Yellow was too late to ripen properly. At Woburn also Manitoba Brown did well.

In 1936 at Rothamsted a May frost again checked the plants and a severe hail storm on June 21st did much damage. The yield of seed was small, nevertheless the maturity was good. At Woburn the plants suffered from rabbits, hares and birds.

In 1937 some more varieties were received from the Manitoba Agricultural College, one of which, Tokio, is promising both in yield and early maturity; the seed is dark but it may be possible to remedy this by suitable hybridisation and selection.

Prof. Southworth has now more assistance than before and has been able to commence more intensive study of the morphological and physiological characters of soya bean and he is trying to obtain new varieties better suited to our conditions than the existing sorts. We have been fortunate in securing the help of a collaborator in South Africa who plants the seeds during our winter and returns them to us in time for planting during our summer; we thus secure two crops in one year which saves a good deal of time in making selections.

Vernalisation did not prove helpful either for soya beans or maize.

PYRETHRUM

In view of the importance of pyrethrum as an insecticide and of the fact that it grows well on light sandy soil, a number of experiments have been made to see if by manuring the yields can be raised to levels at which they would become remunerative without at the same time lowering the insecticidal efficiency of the crop.

The experiments were made at Woburn, and were continued over four years: both lime and fertilizers increased the yield of flowers and of pyrethrum, the substance which measures the insecticidal value, but in some seasons the effects were only slight.

https://doi.org/10.23637/ERADOC-1-69

The effect of lime—2.9 tons of ground lime applied in the first year only—was as shown in Table XLIII.

TABLE XLIII

Effect of Lime

	1934	1935	1936	1937
	Dry flowers (cwt. per acre)			
No lime	4.70	6.72	4.93	4.26
Lime	5.14	7.32	5.28	4.86
Increase	+0.44	+0.60	+0.35	+0.60
Standard errors	±0.29	±0.37	±0.33	±0.45
	Pyrethrin I (per cent. of flowers)			
No lime	0.528	0.449	0.406	0.520
Lime	0.559	0.472	0.420	0.545
Increase	+0.031	+0.023	+0.014	+0.025
Standard errors	±0.020	±0.021	±0.023	±0.018

Lime produced a slight increase—about 1 per cent. each year—in yield and in pyrethrin I. Lime also appears to have had a beneficial effect on plant survival. The percentages of plant failures in the last two years are as follows :

	1934	1935	1936	1937
No lime	8.1	5.5	23.3	31.2
Lime	7.9	5.7	16.9	25.1

The yield of dry flowers in the first year (1933) was small : it rose to a maximum in 1935 and thereafter decreased.

The manures tested were fish manure (0.2 cwt. nitrogen per acre) and complete artificials, sulphate of ammonia (0.2 cwt. nitrogen) superphosphate (0.2 cwt. P_2O_5) and muriate of potash (0.25 cwt. K_2O) per acre.

The manures applied every year gave a significant increase in flowers in 1934 and 1937 but had little effect in 1935, while in 1936 there was a slight but not significant decrease. In the two years in which the manures produced an increase, fish manure gave higher yields than artificials though the differences were not significant.

The manures had no effect on pyrethrin I contents in 1934 and 1935 but produced significant increases in 1936 and 1937.

The results are shown in Table XLIV.

TABLE XLIV

Year	No manure	Artificials	Fish manure	Artificials + fish manure	Standard errors	Mean of manures
			Dry flowers (cwt. per acre)			
1934	4.94	5.28	6.03	5.60	±0.404	5.64
1935	6.62	6.84	6.38	7.42	±0.520	6.88
1936	5.27	5.00	4.76	4.78	—	4.85
1937	4.17	4.58	5.25	5.49	—	5.11
			Pyrethrin I (per cent. of flowers)			
1934	0.55	0.54	0.54	0.54	±0.028	0.54
1935	0.46	0.45	0.45	0.46	±0.025	0.45
1936	0.38	0.47	0.46	0.45	±0.033	0.46
1937	0.51	0.57	0.55	0.55	—	0.56

https://doi.org/10.23637/ERADOC-1-69