

Up to the present time 148 lines have been tested. Very few lines tested have proved to be anything like purely of one type, the only ones approaching type purity being seven lines of Wimmera rye-grass and two lines of Western Wolths type, one of these being a line of Garton's Express rye-grass and the other a single-plant selection made near Auckland.

The variation in type from both line to line and within each line is very wide. The following table shows the variation in type of lines which were received as Italian rye-grass and Western Wolths:—

Table 1.—Showing Type Analysis of Commercial Lines sold respectively as Italian Rye-grass and Western Wolths Rye-grass.

Sample sold as—	Percentage of Lines dominantly of Western Wolths Type.	Percentage of Lines dominantly of Italian Type.	Percentage of Lines dominantly False Perennial.	Number of Lines tested.
Italian .. ..	25	67	8	89
Western Wolths .. ..	22	69	9	32

This table definitely shows that there is virtually no difference between commercial Italian rye-grass and commercial Western Wolths, and that a purchaser has no guarantee as to which he is getting when buying one or the other.

Yield and persistency trials have been carried out in rows and single plants, and Table 2 gives the relative value of these types. Ordinary Italian is placed at 100 in each case.

Table 2.—Showing relative Behaviour of Annual Rye-grass Types over a Period of Twelve Months.

Type.	First Six Months —Hay Yield.	Recovery after First Hay Cut.	Second Cut —Hay Yield.	Percentage of Death after First Year.*
Italian .. ..	100	100	100	4
Western Wolths .. ..	128	32	63	51
Wimmera .. ..	No data	1.8	0	100

\* Surviving plants include many showing poor vigour at this stage.

This table clearly indicates the superiority of the Italian rye-grass over the Western Wolths type where one to two-year pastures are laid down, the Western Wolths producing more than the Italian type in the first six months only. The Wimmera rye-grass for the first two months probably outyielded both Italian and Western Wolths, but the poor recovery after cutting minimizes its value where the climatic conditions suit Italian rye-grass and Western Wolths.

#### SINGLE-PLANT STUDY.

Twenty plants of each of thirty-one lines were put out as spaced single plants for the purpose of analysing the plant types of various lines. The plants were placed in three wide groups as follows:—

(1) Western Wolths type: Open, quick-maturing, free-seeding type. This type gave a good yield to begin with, but after seeding the majority of the plants died.