

plete separation of ribgrass and red clover is possible with specialised machinery, but the cost in relation to the quantity of seed with which it would have to deal is too high to warrant its installation.

Ribgrass is common as an impurity in red clover seed harvested in areas which dry out to a considerable extent in the summer and on which the cover of red clover is relatively thin. Almost the only remedy for a paddock which is badly infested with ribgrass is the plough. Prevention is better than cure, and every effort should be made by suitable management to ensure that a dense cover of clover is obtained.

### White Clover.

The production of clean white clover seed also presents its difficulties in the nature of impurities, of which the most common is undoubtedly suckling clover. Although the seed-cleaning machinery is extraordinarily efficient in this separation, some lines of white clover which contain large seeded suckling are very difficult to clean thoroughly, with the result that the value of the white clover seed is correspondingly low. In such lines heavy dressing losses are often inevitable in order that a reasonably satisfactory sample of white clover may be produced.

Suckling clover is a second-rate annual clover, and is usually present in white clover crops taken from dry or fairly low fertility country. In addition to this, there is also a large amount of white clover seed saved more by accident than design as an associate seed in a ryegrass crop. In such cases the presence of suckling clover is fairly common.

If, however, an area is sown down with a good strain of white clover on a good seed bed and is well limed and manured, the growth of the white clover is usually sufficient to smother out the suckling clover. Here, again, emphasis should be laid on the necessity for managing a seed production area for one particular species rather than endeavouring to obtain a crop of two species or, as sometimes happens, shutting up a paddock and harvesting whatever happens to look best at harvest time. Alsylke and timothy are also undesirable impurities in white clover seed, and should be discouraged in any area to be used specifically for the production of white clover seed.

The control of timothy in an area closed for white clover seed production may be secured by topping the

heads of timothy with a mower before they have produced fully-developed seeds. This is roughly a month or so before the clover is ready to cut. Topping later will, of course, be of little use, as the mature heads will merely be picked up and threshed with the clover.

### Alsylke.

There is comparatively little alsylke harvested in New Zealand, although a certain amount of the larger seed is dressed out of white clover as an impurity. In harvesting alsylke for seed, white clover, suckling clover, and timothy are likely to be most troublesome as impurities when it comes to dressing the crop.

It should be understood that in addition to the foregoing species there are several others which are harvested more or less regularly in this country.

For example, the annual production of browntop seed is considerable, but pastures are seldom sown down and managed specifically for the production of the seed of this species, and the harvest in many cases is fortuitous. Consequently, it is hardly worth making any recommendations regarding the control of undesirable plants.

### Summary.

In the production of "clean seed" the following points should be borne in mind:—

- (1) Sow seed which is free from impurities that are known to be difficult to separate in the dressing plants.
- (2) Sow clean seed on clean land.
- (3) Try to ensure that the crop desired is the dominant species at harvest.
- (4) Keep an eye on the seed, not when it is being dressed, but when it is being threshed.
- (5) For seed production areas sow only mixtures that will not produce undesirable impurities.
- (6) Remember that the seeds of certain useful pasture plants become almost "weed seeds" when occurring as impurities in a line of another kind of seed.
- (7) Don't send damp seed to be dressed.

The following table shows the most common undesirable impurities encountered in the dressing of pasture seeds:—

| Seed being dressed. | Impurities that are hard to remove.  |
|---------------------|--|
| Perennial ryegrass  | Shelled goosegrass, Italian ryegrass, English trefoil in the shell, cocksfoot, broken straw. |
| Italian ryegrass .. | Goosegrass (occasionally), White clover in the pod, Hairgrass.                               |
| Cocksfoot .. ..     | Small ryegrass, shelled goosegrass, damp yorkshire fog in the shell.                         |
| Timothy .. ..       | White clover, Alsylke, Suckling clover.  |
| Red clover ..       | Ribgrass, Dock (sometimes).  |
| Alsylke .. ..       | White clover, Timothy, Suckling clover.  |
| White clover ..     | Alsylke, Timothy, large Suckling clover.   |
| Chewings fescue     | Catsear, small ryegrass, Cocksfoot, Dogstail.  |

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