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### Some recent radio talks.

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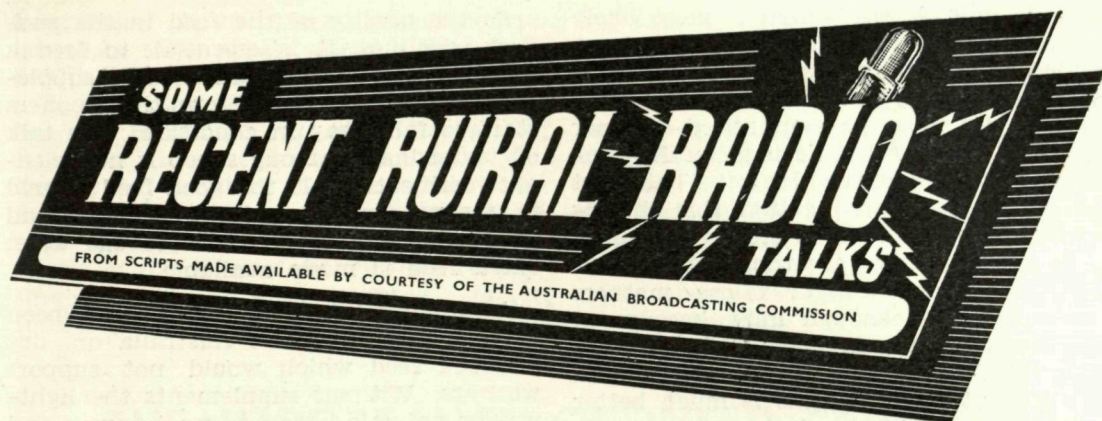
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## WASTAGE IN WEANERS

By L. C. SNOOK, D.Sc., Animal Nutrition Officer

**E**VER since I can remember, the breeders of Merino sheep have been plagued with what is known as the "weaner problem." During the dry summer months, unthriftiness becomes apparent, the affected animals lose condition, and unless green feed becomes available a number will die. The losses on any one property are rarely devastating but over the years the collective wastage of young sheep has been, in some cases, considerable. A puzzling feature is that weaners will be lost on pasture which appears to be adequate for the grown sheep. Also the unthriftiness is often restricted to 10% or so of the weaners in any one flock. It is not uncommon to hear sheep men complain that while the bulk of their young sheep are thriving, there is a "tail" which "looks dreadful."

Many theories have been advanced to explain these sporadic and unpredictable losses. Naturally, the dry summer feed receives most of the blame. This is said to be lacking in protein, or vitamins, or some mineral essential for the well-being of young sheep. If this is so why is it that breeding ewes do not need the same vital nutrients? This query is countered by the argument that young sheep have not had time to build up reserves of vitamins, or that the weaners are much more susceptible to infestation with worms. If this is the case why do a goodly proportion of the weaners do well under the same conditions which are deadly to the unthrifty minority? And why are ram and wether weaners more often affected than ewe lambs? One could list many apparently puzzling features. In the absence of a reasonable explanation I have heard farmers assert that the young sheep become unthrifty from sheer cussedness.

### SHORTAGE OF FOOD

My own explanation has been the simple one. Namely that the losses are due to a straightforward lack of food. This has been dismissed as being far too simple to explain a long-standing, supposedly complex problem. Nevertheless, recent research has confirmed this field observation. An observation, incidentally, which has been long recognised by the tip-top farmers who never have an unthrifty weaner.

### ENSURE A GOOD MILK SUPPLY

The field conditions which precede unthriftiness in weaners are clear and straightforward. If sheep men understand these conditions the trouble can be avoided. First and foremost, it is essential that the ewes should be well fed so that they have a bountiful milk supply and can rear a robust, heavyweight lamb. It is the lightweight lamb from the ewe with



a poor milk supply which is most likely to become unthrifty. The late-born lamb which has to be weaned early in life is an equally likely subject. The importance of the ewe must be emphasised—weaner trouble begins with, and is generally confined to, those lambs which get a bad start in life. It is surprising that this obvious explanation has been so often overlooked. The affected lambs are those which were under-sized at birth or whose mothers could not give enough milk because of poor feeding, or a damaged udder. Naturally the lamb which is well-grown and vigorous at weaning time is much better equipped to tackle hard, dry feed than is his under-sized brother.

It should be emphasised that susceptibility to worms is determined to a large degree by the milk supply of the mother. In many experiments it has been shown that lambs receiving plenty of milk will thrive on worm-infested pastures on which underfed lambs will die. It is for this very reason that the outstanding fat lamb producers find it quite unnecessary to drench their sheep. Adequate nutrition is the basic safeguard. To provide this safeguard a capacity to produce plenty of milk is a basic essential in the breeding ewe.

### **HANDFEEDING WILL REDUCE LOSSES**

Of course the story does not end here. If the weaners are to remain thrifty they must be well fed when taken off their mothers. Even the lightweight lambs which occur in most flocks can be carried through if given plenty of food.

As one would expect, young greenstuff is the best feed for weaners. Unfortunately, greenstuff of any kind is rarely available during the long summer months. Fortunately, excellent results can be obtained if other food is made available.

If possible the weaners should be placed in paddocks where a good growth of mixed pasture has been cut at the early flowering stage and left to lie. The cut material will be both palatable and nutritious, and the mown fields will be free of the grass-seeds which are such a menace to weaners. The feeding out of good quality meadow hay achieves the same purpose.

As the quality of the feed in the paddock declines, it is essential to feed a supplement of cereal grain. This supplement should be fed before the weaners start to fall away in condition. The talk of "cussedness" among sheep is not without justification. If the good feed is held in reserve too long, both weaners and pregnant ewes may refuse to eat when extra feed is made available.

A valuable series of trials have been carried out in South Australia on dry paddock feed which would not support weaners. Without supplements the lightweight animals began to waste away and die within a month. But on similar feed no losses occurred in a group of weaners which were given oat grain twice a week at the rate of  $\frac{1}{2}$  lb. per head daily. The weaners receiving this grain supplement did little more than hold their body weight but none of them died.

### **A GRAIN SUPPLEMENT PAYS DIVIDENDS**

Of more interest to me, however, is the performance of a third group which was supplied with oat grain in a self-feeder. The weaners in this group could eat all the grain they wanted and in fact consumed an average of  $1\frac{1}{2}$  lb. per head daily.

When fed at this rate for some months this requires a lot of grain. It may be argued that it would be better to sell the oats and risk a few deaths among the weaners. The extra grain, however, did a lot more than keep the young sheep alive. It produced bigger sheep carrying more wool. This extra development is of particular value to the young ewes. Well-grown ewe hoggets can be mated earlier and will give a lamb-drop every bit as good as the older ewes. The resultant increase in lambs will pay for the extra grain fed to the weaners. Once again, let me stress that all these benefits were obtained from the use of a grain supplement only. Despite the poor quality of the dry paddock feed there was no need to purchase protein as such, or vitamins, or magic mineral mixtures. All cereal grains, wheat, oats or barley, are equally effective. It is a matter of using the grain which is



most easily grown. More care, of course, has to be taken when wheat is first used, as this can be dangerous to hungry sheep.

To summarise. Unthriftiness in weaners can be prevented by good husbandry. First and foremost the ewes must be generously fed so that the lambs are well-developed at birth and receive plenty of milk right up to weaning. Secondly, plenty of nutritious food will ensure continued well-being after weaning. Green feed is the best foodstuff for young sheep

but excellent results can be obtained on poor quality dry pasture by the provision of cereal grain, preferably in self feeders. The cost of the grain which is used will be repaid by freedom from deaths, increased wool yields and more rapid growth. Weaner ewes which have been well fed can be mated younger, and can be depended upon to give a good lamb drop. On other words, simple, honest, home-grown feed can be used to beat the "weaner problem."

## THE IMPORTANCE OF WEED CONTROL in the VEGETABLE GARDEN

By W. KOOYMAN, Vegetable Instructor

**I** SUPPOSE every vegetable grower realises that to obtain satisfactory yields of high quality produce, control of weeds is of considerable importance. There are many reasons why weed control is important, however, as each crop has special problems and characteristics, time would be too short to give a detailed account of all aspects. An endeavour will be made in this talk to touch on some of the more important aspects of weed control.

Weeds are usually fast-growing plants, consuming large amounts of valuable nutrients and water during their growing period. Besides causing injury in this way to many crops, weeds often harbour diseases and pests and this aspect is as important as the competition for water, light and plant nutrients, although it does not appear as obvious.

Nematodes, thrip, red spider and a number of other harmful insects feed and multiply on weeds, and it is usually unsatisfactory to apply control measures in the field when these pests can live and multiply in the vegetation nearby and invade the crop again and again.

Several weeds are known to be hosts of virus diseases and as a rule, these weeds do not produce the usual disease symptoms. The disorder is often readily transmitted by insects from the weeds to vegetable crops.

Most weeds will thrive on many types of soil and grow quickly under adverse conditions. They usually grow well on

roadways, paths, near fences, walls and places where other plants could not exist and they often withstand droughts better than any other type of plant. Weeds are more easily controlled when they are small and every effort towards eradication should be made before they become too big and cause injury to the crop. The possibility of a rapid seed production is also a factor which should not be overlooked, and it is of considerable importance to prevent a "build up" of weeds on the property.

Weed control begins with the preparation of the soil before planting or sowing the crop. When preparing the soil, the grower should realise that vegetable seeds generally germinate more slowly than weed seeds and therefore, the soil should be cultivated thoroughly before planting, thus allowing the annual weeds in the top layer of soil to germinate. After germination, it is then possible to destroy most small weeds by way of a shallow cultivation and the crop can be planted or sown



in the comparatively clean layer of top soil. Therefore, good tillage is an excellent method of weed control and the prevention of weed propagation includes the destruction of weeds in the garden before they can germinate. Generally speaking, most vegetables are planted in rows which will permit the use of some sort of implement. The commercial grower often spaces his plants at such a distance that either horse-drawn or mechanically-drawn implements can be used. This aids control of weeds and reduces cost of production to a great extent.

Weed control in winter is often more difficult than in summer, as **weather** and **moisture** factors play an important part in keeping the crop free from weeds. Generally speaking, the sandy soils in the metropolitan area are easy to keep clean in comparison with peaty swamp, heavy loam or clay in country districts. Most sandy soils dry up quickly even during the winter months, whereas loam or clay may keep moist for many days. The clay particles will also stick to the fibrous roots, and often the weeds have to be removed entirely to prevent re-growth.

Next to good tillage and proper cultivation, vigorous plant growth will provide a certain amount of weed control because the ground will be covered quickly, thus smothering the weeds through lack of light. Complete eradication of weeds, however, is costly and only justified in exceptional cases, and generally speaking, the aim should be "weed control," meaning the reduction of weed infestation to such a degree that at no stage can injury to the crop be caused by weeds.

Chemical weed control is a modern development applicable to a limited number of vegetable crops. Because so much depends on the type of crop, the stage of growth and the weather at the time of application, chemicals may only be used by experienced growers, and it should be borne in mind that chemicals may cause serious crop injury when applied incorrectly.

The importance of weed control, both inside and, where possible, outside the boundary of the property, cannot be over-emphasised. Better yields from better and healthier crops will always repay the cost of proper crop and soil management.

## STRAWBERRY GROWING

By J. CRIPPS, Horticultural Adviser

**S**TRAWBERRIES are not grown on a large scale commercially in this State, but many private growers cultivate them and indeed they are an ideal backyard fruit crop since they can be grown in a small area and are not subject to attacks by fruit fly.

The local commercial grower, recognising the importance of organic matter, normally grows strawberries in peaty soil. The private grower would be well advised to follow this lead and apply organic matter to the soil before planting strawberries. Cow manure, compost and lawn mowings are all suitable. Poultry manure from deep litter poultry, that is, poultry manure mixed with sawdust, could also be used. What is used will depend on availability, but whatever it is it must be used in large quantities. It would be very difficult to apply too much organic matter to soil which is to grow strawberries and

experiments in other countries have shown that artificial fertilisers are no substitute for organic matter. It would also be advisable to mulch the strawberry bed with lawn-mowings at fairly frequent intervals and to give an artificial fertiliser such as Potato Manure E at flowering time.

The next step will be to procure planting material. Unfortunately vigorous strawberry plants free of virus diseases are difficult to obtain in this State. In other countries plants from virus-free clones, distributed from research stations, are grown in isolation by specialists. They



are sprayed frequently to control insect vectors such as aphids, and inspected by Government inspectors. Certificates are issued for virus-free plants and these are sold to fruit growers.

Locally the purchase of a virus-tolerant variety such as Climax is the only solution to the planting problem which I can suggest. This variety was recently introduced into Western Australia but it must be remembered that in its country of origin, Great Britain, it has become subject to a genetical breakdown known as June Yellows or streak. Although this trouble has not appeared here it may do so in the future and has, I believe, been noticed in Victoria. Therefore, although Climax is at present a suitable variety to plant locally, in a few years' time the situation may have changed somewhat.

Breeding programmes have been underway at two centres—Merton and Archin-crive in the British Isles—and recently two promising varieties were released. It is hoped that these will have the virus-tolerance and resistance to red core of Climax, without the tendency to genetical breakdown.

If the grower desires to propagate his own plants, he should first of all select plants during the fruiting season for their vigour, cropping capacity and freedom from disease. These plants should be marked and then transplanted the following winter to a separate area as far away as possible from fruiting plants. During the next season frequent spraying with a systemic insecticide such as Metasystox should be carried out to kill the insect vectors of virus disease, and all blossom removed. Runners will of course be retained and planted out the following winter. In the case of plants grown for fruit, the reverse should be the case and

all runners should be removed. The strawberry plant cannot produce both a good crop of vigorous runners and a large crop of fruit. Division of labour or functional specialisation is therefore essential.

When planting strawberries, great care should be taken to spread the roots, and planting with a dibber is not advisable unless the plants are very small. On a large scale planting, machines have given good results.

As regards planting distances in the row, 12 inches is the minimum, but in good soil a slightly greater distance is to be preferred. Distance between the rows will depend on the method of cultivation employed. Cultivation itself should always be shallow, as the strawberry is a surface-rooting plant.

When the crop appears, protection from slugs and snails will be necessary in the private garden and baits such as those containing metaldehyde should be put down. The application of a spray containing copper, such as Bordeaux mixture, to control leaf spot is also advisable.

Lastly, strawberries have a limited life and plants can only be expected to crop for two years so that the planting should not be regarded as permanent. A further area of soil should therefore be prepared and planted before the original plants reach the end of their economic life, that is, at least every two years. In no circumstances should replanting take place in an area recently occupied by strawberries.

To sum up, I would suggest that strawberries can only be grown successfully if healthy vigorous plants are obtained, organic matter added to the soil and either fruit or runners—but not both—produced.

