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Oats and Vetches
for Hay and Silage

OATEN hay, or oats conserved in the form of silage, is always a valuable insurance against lean periods on the dairy farm—but if that hay or silage is made from a mixture of oats and vetches, it will be infinitely more valuable. The vetches give a much greater bulk of feed and, being legumes, they boost the protein content of the fodder, so that it cuts down the need for costly supplementary feeding.

The Dairying Division of the Department of Agriculture has carried out a lot of experimental work in recent years to determine the best types of vetches and oats to use, and the best methods of producing the crops.

The most satisfactory mixture used in the experiments so far has been 15 lb. of Commercial Purple vetch seed sown with 60 lb. of Algerian oats per acre, using 2 cwt. of superphosphate or a similar quantity of super-copper-zinc if the land is copper or zinc deficient.

On potash deficient areas, good crops cannot be expected unless the deficiency is rectified by the application of 1 cwt. of muriate of potash to the acre.

**TYPE OF VETCHES TO SOW**

Common vetches (Golden Tares), Commercial Purple, several introduced strains of purple vetch and common vetch and one flowered vetch (Vicia articulata) were among the varieties tested.

Commercial Purple was outstanding in the dairying districts although Vicia articulata gave good results in the drier districts such as Boyup Brook and Darkan.

Vetches are weak-stemmed plants which lodge quickly if grown alone. A cereal crop provides support for the vetches, and oats are the most satisfactory crop for this purpose.

**TYPE OF OATS TO SOW**

In selecting an oat variety to combine with the vetches, it was necessary to take into consideration the differences in growth habits of the two plants. In our trials, the vetches grew slowly during autumn and winter and made rapid progress in spring. Oats which made vigorous autumn and early winter growth were apt to "smother" the vetches.

Algerian oats are the recommended variety, as their growth habits most closely approximate those of the vetches.

A bulky crop of oats and vetches grown at Armadale
SEEDING RATES

The experiments showed how important it is to maintain a good balance of the species. If the vetches are sown too thickly, they tend to choke out the oats in early part of the season.

If too heavy a seeding of oats is made, they will dominate the stand and the vetches will be too thin.

We tried various sowing rates, using up to 60 lb. of vetches to the acre without obtaining any increase in the total quantity of hay or the proportion of vetches to oats.

We recommend 15 lb. of Commercial Purple vetch and 60 lb. Algerian oats for most sowings.

In the early stages of the experimental work, vetch seed was difficult to obtain and supplies were imported from Tasmania, the Eastern States and the U.S.A.

Since then, seed production of the Commercial Purple vetch has increased in Western Australia and there should be no difficulty in obtaining seed locally.

TIME OF PLANTING

Oat and vetch crops are best sown in the late autumn and most crops are not planted till the end of May or the beginning of June. This has been found to be a suitable time, as earlier sowings have resulted in more rapid growth of oats with a consequent reduction in the contribution from the vetches. For this reason, early autumn planting is not favoured for crops of oats and vetches. As these crops fit into a rotation, and weed control should be carried out during the cultivation year, the later planting provides an excellent opportunity for controlling weeds by autumn cultivation.

GRAZING

The vetch and oat mixture may be grazed during the winter and early spring. This has been found helpful in preserving a balance of plants when the oats have grown too rapidly for the vetches in the early stages. It may also be necessary to adopt such a practice if an earlier variety of oats such as Ballidu is used instead of Algerian. Grazing has been successfully carried out on oat and vetch crops as late as September, but the aim should be to cease grazing after the end of August.

When the oat and vetch crop is grazed, stock show a preference for the oats and these are reduced in height to give the vetches a better opportunity of making strong development. Quick grazing, preferably by means of strips, using an electric fence is suggested, but the oat and vetch mixture should not be grazed too close to the ground before the stock are removed.

DEMONSTRATIONS WITH VETCHES AND OATS

During the last five years, 34 demonstrations have been carried out with vetches and oats in dairying areas. Almost without exception, these demonstrations have proved very successful, although in one or two instances a low proportion of vetches has resulted from very wet conditions during the year.

Yields of up to 3½ tons per acre of hay have been obtained and when fed to stock these have given good results. The demonstrations have convinced many farmers of the value of this crop and the area being planted to vetches and oats is increasing each year. The increase has been quite rapid and the demand for seed has frequently exceeded available supplies.

TIME OF CUTTING

Vetches make very strong growth at the end of the growing period in the spring, and frequently they are still making vigorous growth when the oats have reached the "milky" or "dough" stage when they are normally cut for hay. In many crops the vetches have provided the main bulk of the hay and, where this is the case, cutting for hay should be determined by the stage of growth of the vetches rather than the oats. Vetches should be cut for hay when the pods are beginning to swell. Flowering in the vetches is rather prolonged, especially in purple vetches and the time of cutting should be determined from the swelling of the earliest-formed pods.

When the vetches have reached this stage, the oats may be more advanced than is usually the case, but as the vetches
are providing the bulk of the crop, the oats serve firstly to hold up the vetches and secondly to provide some oaten grain among the hay. The nutritive value of hay made from oats and vetches and cut at this stage, is still high, and protein content in the dry matter of the hay ranges from 12 per cent. to 19 per cent. protein, which is at least twice the content of protein that would be expected in the average oaten hay crop.

**FERTILISER**

In all trials and demonstrations, superphosphate at the rate of 2 cwt. per acre has been used and this rate of application appears to be quite satisfactory for this crop. Where copper, zinc or potash deficiencies are likely to be encountered, these should be rectified if a good crop is to be expected.

**PLACE IN ROTATION**

On many farms, subterranean clover pastures deteriorate after a period of eight to ten years, and weed species such as silvergrass, capeweed, flatweed, etc., occupy a large proportion of the pasture area. At this stage it is recommended that the pasture should be ploughed up and weed control attempted before improved pasture species are sown back into the paddock. After ploughing, a number of cultivations may be necessary before weeds are suppressed and this results in a considerable delay in sowing back to pasture. An oat crop or an oat and vetch crop has been used during this cultivation year. The early autumn cultivations for weed control may be carried out and the rather late autumn or early winter planting of vetches and oats is found quite satisfactory. The tall-growing crop of vetches and oats also acts as a cleaning crop to keep in control and prevent the seeding of weed species which may still be present in the paddock.

By growing a crop of oats and vetches during the cultivation year, the paddock is not idle and a heavy yield of good quality hay is provided while the weed control programme is in progress. In the following autumn the land is ready for early cultivation for seed bed preparation and with only a minimum of weed control can be planted with improved pasture species.

**WET SITUATIONS**

Vetches have not proved very suitable for wet situations. During the last two years, wet conditions in the early spring in 1955 and the winter of 1956, have resulted in poor stands in low-lying paddocks. Under these conditions the nodulation of the vetches is defective, even though they have been treated with inoculant, and plants become very spindly, taking on a reddish-purple colour. Such plants do not succeed in making strong growth in the spring. For this reason vetches and oats should not be sown on paddocks which are liable to become excessively wet during the winter months.

**SUMMARY**

Commercial Purple vetch and Algerian oats are sown at rates of 15 lb. and 60 lb. per acre respectively. They are fertilised with superphosphate at 2 cwt. per acre. Wet paddocks or those which become waterlogged in winter time are unsuitable. Sowing of this crop may be delayed until the end of May or the beginning of June to enable autumn cultivation for weed control. Where oats are growing too rapidly for the vetches, during the autumn and winter months a better balance of species may be obtained by grazing.

The crop is cut for hay when the pods begin to swell and for silage when the first pods are first formed. Vetches and oats fit very well into a rotational system on dairy farms and assist with the introduction of more improved grass and legume species.
If ever there's a well-named weed it's Stinkwort. Look at a Stinkwort flower under a magnifying glass and you'll find its petals covered with fine hairs, barbed and feathered like an arrow.

These find their mark in the stomach and intestines of livestock. Fatal diseases, such as Pulpy Kidney in sheep, set in; death sometimes occurs without any apparent cause. Even if the weed does not kill stock, it taints milk, cream and meat.

Several control measures have been tried for Stinkwort. Scientists have found that it shrivels under a hormone spray weedkiller* supplied by Shell. This weedicide kills the Stinkwort, but when used correctly does not harm established grasses, crops or livestock.

Again SHELL products are helping the man on the land in his fight against weed pests which affect stock and crops.

*Shell Weedkiller E