harvester makes lenient grazing possible, it also contributes to total herbage production. In leniently grazed pastures also the clovers seldom become aggressive, with the result that bloat is less prevalent.

Troublesome pasture weeds become less of a nuisance with a harvesting system which involves topping of large areas once or more often during spring and summer. Unpalatable weeds may be turned into palatable silage, and though the feed value of this may not be high, at least the weeds are prevented from reseeding and most of the seed that is harvested will be destroyed in the ensiling process.

In brief, by the alteration of farm management practices the forage harvester could be made to replace conventional equipment such as buckrake and mower with little or no extra capital cost and could be operated with less labour. The change could make increased production possible by allowing or even necessitating improved management.

**However, to make the change-over worth while it is necessary to adopt the forage harvester as an integral part of a system of farming, not just as an alternative to the buckrake.**

The feasibility of adoption of the system depends also on the availability of relatively cheap, one-man forage harvester units for use by individual farmers or of dearer, two- or three-man units, with a correspondingly higher output, mainly for contract work.

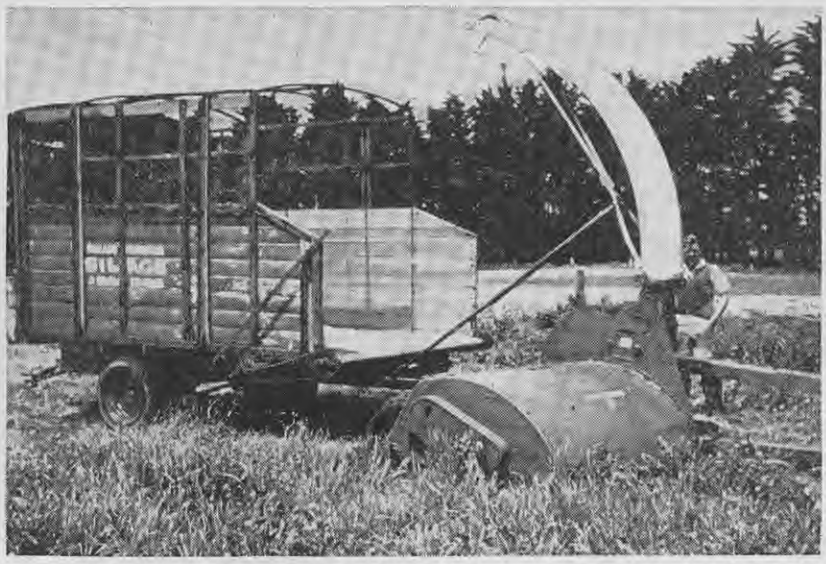
## Silage Making

The relative merits of silage and hay are often debated but, though both have their place, most farmers agree that silage is the more useful material. The increasing popularity of silage is certainly due in large part to the fact that it has a greater range of usefulness: For dairy cows it can be used in early spring to supplement autumn-saved pasture; in late spring to counteract an outbreak of bloat; in late summer for maintaining milk production; and in winter as a maintenance ration.

Silage is cut early, thereby encouraging a greater production of pasture aftermath than after late-cut hay, and there is less damage to pastures through opening up of the sward. Silage making can also be proceeded with without risk from the weather.

The factor which detracts from the attractiveness of silage making, however, is the high labour requirement, both for harvesting and for feeding out. Machinery can be used to replace labour, the use of the forage harvester type of machine being the extreme in mechanisation.

All forage harvesters chop and lacerate the material they harvest,



Single-purpose curtain-roll unloading trailer with tongues at either end for easy handling and quick turnround. When full the trailer is hitched at the free end to another tractor and as one trailer is pulled away another can be pulled in behind the forage harvester by using a snatch block and wire rope.

which assists in obtaining better compaction of the material. Air is excluded and overheating, which destroys protein and carbohydrate, is eliminated. The bleeding of grass leaves also perhaps assists in the production of a desirable type of silage; the forage harvester seems to make better silage than can usually be made with other implements. During observations on a number of properties it has been uncommon to see poor silage produced by a forage harvester.

Because of the compaction produced in the mass good silage can be produced late in the season from material which is otherwise considered too dry to pack sufficiently to prevent excessive heating. The compaction extends right to the top of the stack or clamp, so that the commonly observed dark, overheated zone on tops of stacks seldom occurs on those built with a forage harvester. The compaction of the top layers produces a seal on top which gives considerable protection from the weather.

Storage of the silage either in pits or trenches or in above-ground clamps is possible, though the latter are more laborious to build with the short chopped material and require either hydraulically operated high-tip trailers or curtain elevator unloaders which will operate even when going down the wedge slope. Wooden or more permanent, concrete bunker sides reduce waste and make filling and compacting safer and much easier.

Provision of a concrete floor and feeding apron permits self-feeding, which is becoming increasingly popular. The forage harvester system, since it places heavy loads on very mobile trailers, facilitates transport of material to such permanent sites. Chopped material is easily extracted from the feeding face by stock and little is wasted on the ground. There is no need for cutting with a knife, as chopped material is easily forked for feeding out in the orthodox way or for the loading of trailers with front-end loaders or rear-mounted silage forks.

## Haymaking

Harvesting with the forage harvester is not confined to the saving of silage. Forage harvesters have been used successfully for cutting hay crops, which are baled the same day as cutting or the day after. The forage harvester cuts, bruises, lacerates, and aerates the material while spreading it like a carpet on the sward. Drying is accelerated so that in suitable weather light crops cut in the morning have been baled the following afternoon.

The quicker hay is dried the greater is the saving of its food value, and the quality of the hay produced by the forage harvester appears extremely high. Hay produced by this method probably has a food value equal or superior to that of silage and hence would be very useful.

Since the hay may be dried in 24 hours, it is possible to harvest at any time when the weather seems fairly certain to remain fine for 24 to 36 hours. Thus haymaking could be carried out in November, when the weather is normally considered to be too unreliable, by the same machine