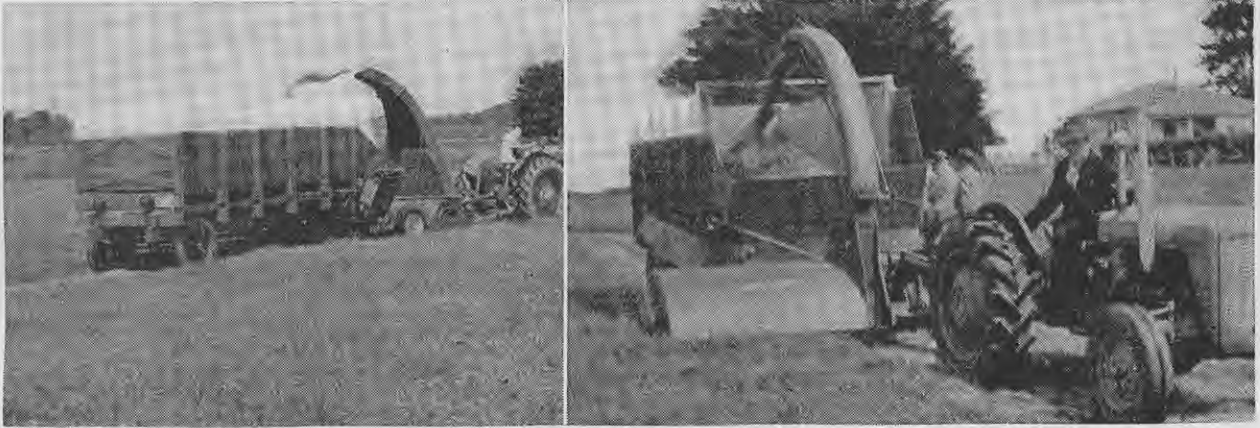


FORAGE HARVESTER SYSTEM OF MAKING SILAGE AND HAY



This large trailer is unloaded by chain and slats, which move the load out the rear door into the trench.

that makes silage making in January also attractive.

Some forage harvesters cannot compete with the hay mower for speed in a heavy crop. In light crops forage harvester speed compares favourably with that of the hay mower and it is recommended that light crops be harvested. The time-consuming sharpening of knives that slows up mowing has been mostly eliminated in the forage harvester, and because of this and less other maintenance the ultimate speed of harvesting can even exceed that of the mower.

A difficulty where hay is harvested as described may be arranging for contract baling.

Forage Harvester Development

The forage harvester has developed in the past four years from a chopper that picked up windrowed material from a mower and rake to the present flail-type, which does all these operations at once. It cuts, chops, elevates, and loads the material into a following or side-fitted trailer or truck.

When the trailer has been filled it can be replaced by another and the forage harvester continues to work as the first trailer is unloaded by another operator. With one-man operation the entire unit is taken to the trench or pit and unloaded, either by backing up the unit to the side or taking it through the trench or over a double-ended clamp. The silo site should be planned carefully to reduce to the minimum possible the distance of haul from paddock to silo. The speed with which silage is handled leads to greater overall efficiency in silage making.

Tractor Power Requirements

Fully effective use can be made of power available only when the tractor is used with a suitably matched forage harvester. Overloading a small tractor

soon leads to overheating, power failure, and costly repairs. However, purchase of a bigger tractor to operate a 5 ft or larger forage harvester would be uneconomic on a small farm unless contract work is to be done also.

To operate a large forage harvester and pull a fully laden trailer over a farm requires about 7 h.p. per foot of cutting width. More power would be needed for work on rolling country or hills or with a heavy trailer. It is important either to have a tractor of sufficient power for forage harvesting or to buy a forage harvester within the limits of the tractor's power; otherwise it is better to rely on a contractor if a change to forage harvesting is to be made.

Tractors with live power take-off and a reasonable selection of gears have distinct advantages. Farmers should be fully aware of the power requirements before launching into the new system.

The Forage Harvester

The present forage chopper replaces the mower, the side rake, and usually the buckrake. It uses a rotary type cutter fitted with pendant knives. Centrifugal force and wind action similar to that of a fan are used to cut and elevate the material up through the delivery chute into a following trailer.

There are few moving parts and little wear, except to the linkage of the knives. The knife blades can be sharpened, but seldom are. Balance is most important; when the cutter rotor is turning at 1,450 to 1,700 revolutions per minute one ounce out of balance can cause severe vibration with damage to bearings and framework. The rotor should be in balance when revolving at any speed. Farmer engineering projects are often out of balance and can be dangerous. If a

knife is bent or lost, it should be replaced immediately to maintain balance.

Forage Harvester Trailers

Probably as important as any other feature of the system is a serviceable trailer which can be readily adapted to hauling silage as well as to fulfil its other purposes on the farm. It must be versatile to justify its cost.

Usually the most versatile trailer is a hydraulic-tip type having a tipping angle of 65 degrees or more so that it will tip when going down hill through a trench. Such a trailer should bear heavily on the tractor with the wheels well to the back. If further support is required, a small wheel can be adapted to swivel under the tongue.

A cage framework that is readily removed from the deck is desirable. This should be wider at the back than at the front so that material will drop clear of the sides as soon as the load begins to move. Forage harvester trailers should have two gates at the back which can be quickly swung round the sides out of the way so as not to interfere with any tipping operations. Such a trailer has many uses on the farm and can be readily adapted to others, thereby reducing the cost chargeable to silage making.

Some trailers have drawbar tongues at front and rear with the wheels near the centre of the load when the trailer is full. This prevents the loaded trailer lifting the forage harvester up. When the trailer has been filled a second tractor is hooked on to the rear hitch to take the trailer to the pit. The trailer is wider at the front so that the load tips easily when the trailer is drawn in the reverse direction when taken over by the second tractor. A cable and snatch block may be fitted to pull the empty trailer into place.