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# Factsheet

## SMALL FARMERS: Make your own Haystack for Emergency Dry-Season Forage.

John Keoghan

### REQUIREMENTS:

1. A small 2-wheel tractor fitted with a sickle-bar mower to cut pasture to be made into hay. Several sensible small machines are available including Jarri, Solo and Gravely. Perhaps there is a dealer in your area but in case there is none, here are the headquarters addresses:

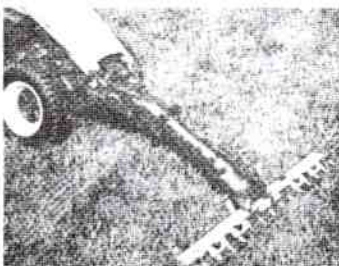
Jarri  
Warner Danby Corporation  
1 Broadway,  
New York, N. Y. 10004

Solo  
Solo Kleinmotoren GMBH  
Postrach 20  
7032 Sindelfingen 6—Machingen  
Western Germany

Gravely  
Clark-Gravely Corporation  
1 Gravely Lane  
Clemmons  
North Carolina  
U.S.A.

Of the above machines, Gravely is by far the most versatile 2-wheel tractor but it is rather complicated and expensive. The Solo and Jarri are both well made, well proven and much simpler. The only alternative at present is to cut with cutlasses which is of course, very time consuming and very hard work!

2. Pitch forks to lift, turn and carry the dried grass (hay).
3. Several men.



GRAVELY

Sickle Mower: Roughs and Forage Crops. All-gear drive for positive cutting action, Swivel action follows ground contour. Reinforced construction with four skids to keep bar rigid. Specifications: No Belts. Universal drive with tapered roller and ball bearing fully enclosed in cast Iron housing. 42 - inch bar. Weight: 48 Kg (105 lb). Knife sections: 7.5 cm (3 - in).



SICKLE MOWER — for Titan and Titan G.T. models only. With side shoes — MT 3760 (not illustrated). Less side shoes — MT 3757 (as illustrated below). Designed and built to withstand the toughest grass cutting jobs, this 90 cm (36 in) sickle mower deals effectively with all unwanted vegetations in orchards, on paths and roadsides and in wooded areas. Also ideal for harvesting hay and cereal crops. Use 40 cm (16 in) wheels on extension tubes and operate on low speed ranges at half throttle.



SOLO

Made of heavy cast - magnesium housing and mounted on cleated pneumatic tires, the "520" leads the field by a large margin. The handlebar is adjustable for your most comfortable height and protects you from vibrations through heavy rubber shock blocks. Disconnect the drive train when turning or tugging — and don't be afraid to mow on fairly steep inclines. The sickle bars of 85 or 105 cm (34 in or 42 in) width are flexibly mounted and supported by skids. The entire unit is approx. 1m (40 in) long, without handlebar, and weighs approx. 45 kg (100 lb) without engines.

## METHOD:

1. Choose an elevated or well drained area for the haystack. If in doubt about drainage, cover a circular area of soil with stone to a depth of 2.5-7.5cm (1-3 in) to give good drainage.

2. Dig a hole 30-45cm (12-18in) deep and tamp the pole in firmly. The pole will give the stack more strength and can be held onto when trampling on the hay to make the stack compacted and strong.

3. The pasture chosen for making hay should not be too mature: Ideally, the grasses in the pasture should be at a very early seed-head stage or have a large proportion of leafy plants without seed-heads. Don't leave the pasture so long that the low grasses in it become mainly stemmy and therefore in low quality.

Remember, low quality pasture makes low quality hay. Such hay will not even meet the basic (maintenance) requirements of your livestock.

High quality pastures with plenty of legumes in them can be made into high quality hay which will not only maintain your animals but enable them to produce some milk and meat as well.

4. The best time to make hay is at the end of the wet season, to increase the chance of drying the grass quickly. The quality of hay declines rapidly if it is rained on.

5. Cut back the pasture with the sicklebar mower — an area of 0.5 to 1 ha (1-2 ac) is about as much as 3-4 people can handle. If the crop is light then the cut forage can be left to dry where it falls from the mower. If the crop is heavy use the pitch forks to rake it up into windrows, i.e. rolled-up narrow rows of grass every 3 to 6m (10-20 feet) across the field. Turn the windrows each day to ensure good drying but avoid too much handling or you will lose too much of the high quality legume leaves.



Cutting with Sicklebar Mower.

In small fields, the hay can be carried to the stack with the pitchforks. An alternative is to use a cart e.g. a handcart such as the one illustrated or a donkey cart. Gravelly has a small tractor-pulled wagon which can be used to carry the hay.



Windrowing to speed up drying and to make collection easier.



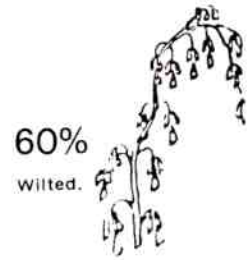
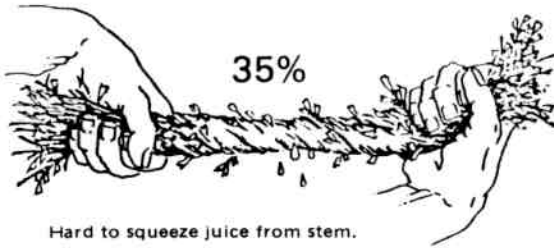
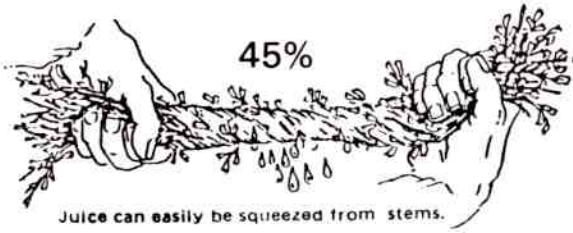
Carry with Pitchforks.



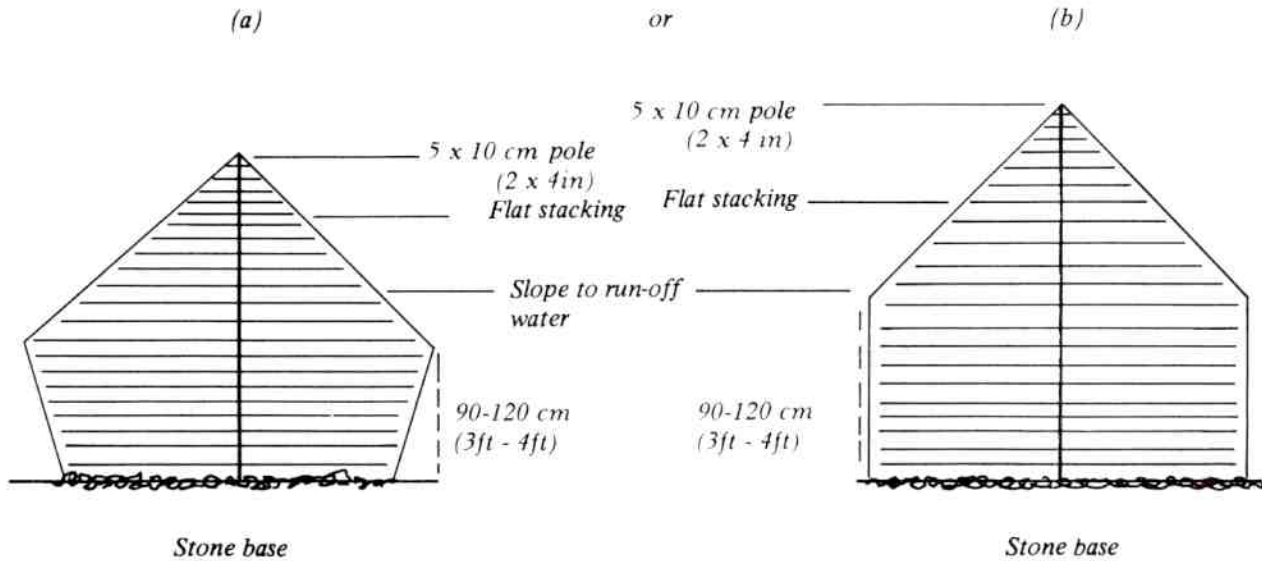
**How do we know when the hay is safe to store in stacks?**

See the following diagram: it shows you a simple test for determining the moisture content of the hay. Remember, if you get impatient and try to store hay that is slightly tough for example, it will heat up and spoil.

## MOISTURE CONTENT OF FORAGE PLANTS



How do we build a successful stack?



**KEY POINTS:**

1. Don't pile on bundles of hay — tease it out and keep it flat. You must have an even cover of level grass.
2. Don't lay the hay on a slope or the stack will eventually collapse.
3. Keep the stack well trampled to bind the hay together and to keep the stack firm and compact.



Trampling is essential to compact and bind the hay together. Note the straight sides of the base.

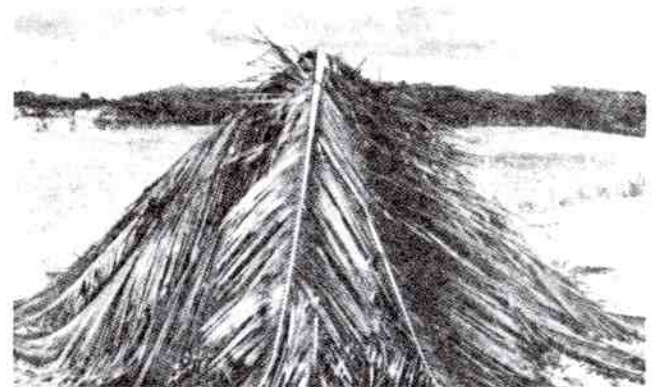
4. With steamy, very dry hay, it will be impossible to build a stack like (a). (b) can be used.



Beginning to taper in from the top, but still laying the hay flat and trampling continuously.



The finished stack prior to covering. Only a thin outer layer has been laid on the slope — to improve water-proofing.



Palm boughs to shed water.

5. Waterproofing: Join palm boughs at their base and lay them over the stack like a "hat". (See photograph above).
6. Remember that if the field is subsequently used for grazing, the haystack should be protected with a fence. Hungry animals can soon make a mess of a neat looking stack!

*Disclaimer:* Mention of specific products by the registered name does not constitute endorsement or recommendation, but is for the purpose of illustration only.