

Cut Labor and Feed Loss by Building This

Chopped Hay Feeder for Sheep¹⁾

By George Pratt² and Merle Light³

The feeding of chopped hay has been found to be a convenient method of handling hay in sheep feed lots. Sheep consume the hay readily in this form, with very little waste. For these reasons this system of feeding hay is gaining popularity with sheep feeders.

To feed hay in this form it is necessary to use a feeder that will keep the short lengths of hay from spilling out of the feeder where it will be wasted. To meet this requirement a feeder was constructed and put into operation on the North Dakota Agricultural College Farm during the winter of 1951-52. Since that time two others of the same design have been put into operation. The hay is stored in bales and is chopped into the feeders as it is needed.

A major problem in the design of chopped hay feeders is the fact that chopped hay tends to arch over in a storage box. As a result, the hay will not feed down freely into the feed troughs and it becomes necessary to force it down by hand. This feeder is designed with a slight taper from the top to the bottom. This provides a sidewall that helps to reduce the arching of the chopped hay. Less assistance is required, therefore, to keep the hay feeding down into the troughs.

Twelve foot and 16 foot feeders are in use on the college farm. The accompanying plan is for a 12 foot feeder. The feeders are built on skids for portability. Two-inch planks spiked to the skids form the floor. The studs are marked with a square as illustrated in the plans and sawed at each end. This provides the tapered wall. The studs are toe nailed to the floor and are held in position at the top by the 2" x 4" plate; 2" x 4" ties and the 2" x 4" rafters maintain the proper width at the top of the feeder.

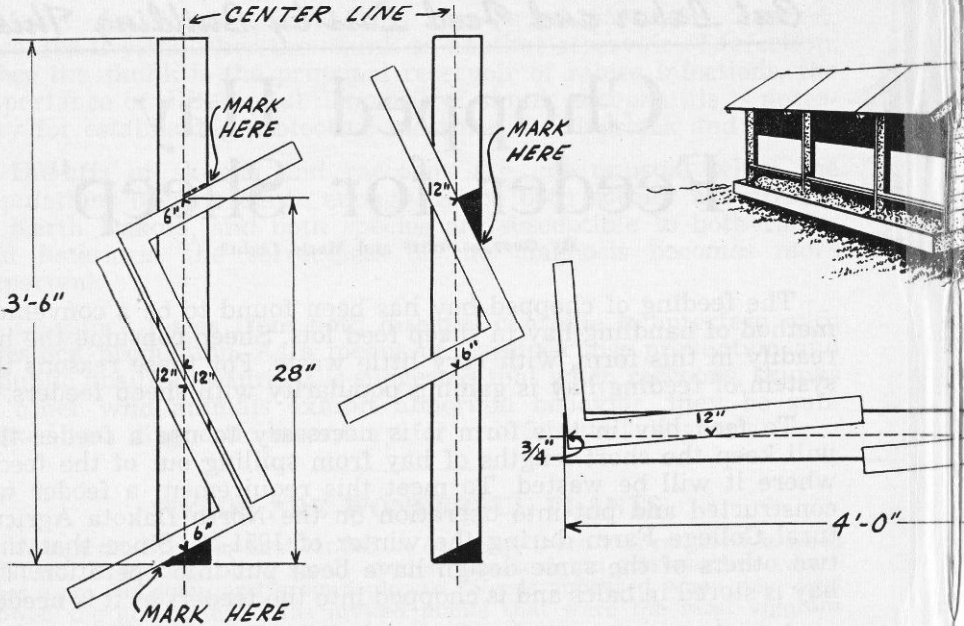
The ends of the feeder are sheathed with shiplap. The side walls are lined on the inside with $\frac{3}{8}$ " exterior grade plywood. Sheets of plywood four feet wide by ten feet long can be cut to fit the sides most economically. Sheets three feet, two inches by four feet are needed to cover the space between one pair of studs. Three of these can be obtained from one of the 4' x 10' plywood sheets.

Eight penny box nails spaced about four inches apart should be used to nail the plywood in place. The plywood applied in this way

¹Progress report on BJO (BJ-9, 35).

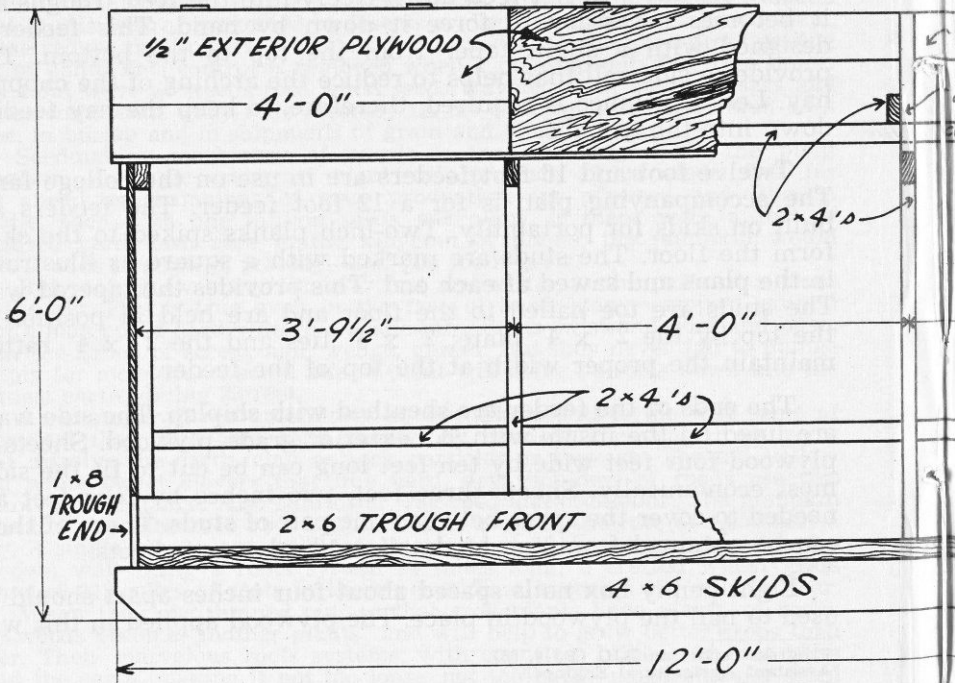
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SQUARE SETTINGS FOR RAFTERS

SQUARE SETTINGS FOR CUTTING



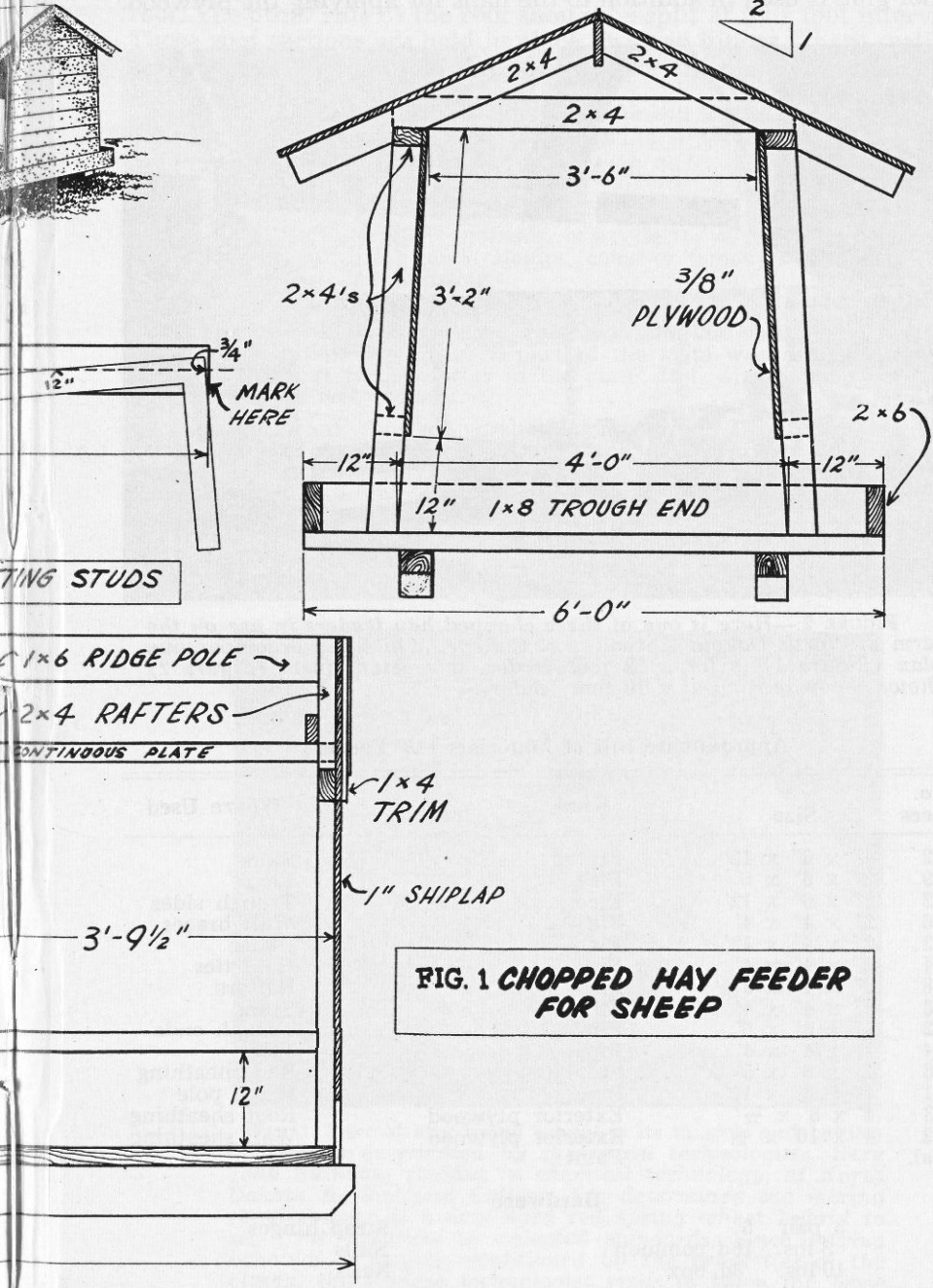


FIG. 1 CHOPPED HAY FEEDER FOR SHEEP

will act as effective bracing. This will produce a feeder that is extremely rigid. This rigidity can be increased even more if waterproof glue is used in addition to the nails for applying the plywood.

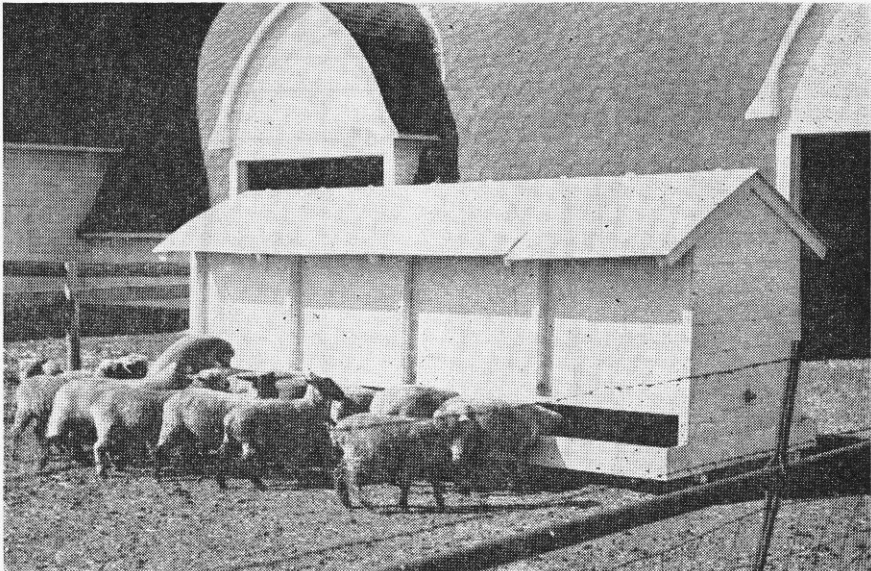


FIGURE 2.—Here is one of these chopped hay feeders in use on the farm of North Dakota Agricultural College. While the accompanying plan (Figure 1) is for a 12 foot feeder, this actual view (Figure 2) shows sheep feeding at a 16 foot feeder.

Approximate Bill of Materials (12' Feeder)

No. Pieces	Size	Kind	Where Used
2	4" x 6" x 12'	Fir	Skids
19	2" x 8" x 6'	Fir	Floor
2	2" x 6" x 12'	Fir	Trough sides
6	2" x 4" x 4'	Fir	Wall braces
2	2" x 4" x 12'	Fir	Plates
4	2" x 4" x 4'	Fir	Roof ties
8	2" x 4" x 3½'	Fir	Rafters
8	2" x 4" x 4'	Fir	Studs
2	1" x 8" x 6'	Pine	Trough ends
4	1" x 4" x 4'	Pine	Trim
18	1" x 8" x 5'	Shiplap	End sheathing
1	1" x 6" x 12'	Pine	Ridge pole
3	4' x 8' x ½"	Exterior plywood	Roof sheathing
2	4' x 10' x ¾"	Exterior plywood	Wall sheathing
1 gal.		Paint	
Hardware			
3 pair	6"		Strap hinges
8 lbs.	16d common		Nails
10 lbs.	8d box		Nails

Exterior grade plywood sheets four feet wide by eight feet long and one-half inch thick should be nailed securely to one side of the roof. The other side of the roof should be split at four foot intervals. These roof sections are held in place by strap hinges. These sections act as doors that provide the openings for filling the feeder.

A 2" x 6" plank spiked in place forms the trough side. A 1" x 8" board closes the trough end. This forms a trough of the proper height and size for the sheep to eat with ease.

Dr. O. A. Stevens, NDAC botanist, is a collector of rare items. Although the collection isn't made up of stamps, coins or famous signatures, it has proved to be just as interesting.

Dr. Stevens receives weed and plant specimens from correspondents throughout the state. One weed received late last fall from a county Extension agent in the northern part of the state was common ragwort and was the first record for it in the state. It is an annual that grows quite thickly in wet ground.

Another plant received earlier from Foster County is the most northern record for waterhemp, one of the pigweeds. An article written recently by a specialist at the University of Wisconsin tells that it has been found in Cass and Slope Counties in North Dakota, and from only one county in Minnesota, although it is abundant in the central states. It also is a plant of ditches and pond banks. It is not a recent arrival to North Dakota as is shown by a specimen collected at Fargo in 1890 by C. B. Waldron.



FINAL TEST of any bread wheat is its mixing and baking quality, as determined by the cereal technologists. Here John Sullivan, student in chemical technology, at North Dakota Agricultural College, has determined the mixing requirements of a new hard red spring wheat hybrid to see if it conforms to accepted standards. Since mixing behavior is largely conditioned by the properties of the gluten, the student technologist seeks to learn the basic cause of gluten differences.