A Versatile Livestock Enclosure for Pasture Research

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For range scientists and agronomists who work with plants grown for livestock feed, there are certain problems that can only be resolved through the use of a grazing animal. However, due to the high cost of grazing trials much pasture management work is conducted on small plots which are mechanically harvested to simulate grazing. The obvious differences between animal and machine harvesting have prompted several investigations to examine the validity of using such "artificial" grazing methods as a substitute for the animal.

Most investigators have evaluated dry matter yield, and their findings have been variable. Wagner et al. (1950) and Taylor et al. (1960) found no difference between clipped and grazed forages. Bryant and Blazer (1961) reported higher grass yields from clipped than from grazed plots, whereas Blue and Gammon (1963), Cuykendall and Martin (1968), and Calder et al. (1970) found that grazed swards yielded more forage than those mechanically harvested. In view of the seemingly conflicting reports, it seems likely that plant yield, as well as other parameters, is influenced by the grazing animal differently than by mechanical harvest.

As an alternative to mechanical harvesting, a technique which utilizes steers to defoliate forages and gains the influence of selectivity, trampling, and fouling of the sward has been used at the Ona Agricultural Research Center in south Florida. The procedure involves halter-broken steers (ours are 180 to 280 kg) which are enclosed within portable pens constructed of eight galvanized steel gate panels. The panels are 1.33 × 4.28-m and weigh 29.5 kg and are linked together by posts made of 5-m steel pipe which are 1.52-m long. An enclosure, which is 8.56 × 8.56-m, is supported by eight posts. There are four middle posts each with two pairs of hooks pinnately located at the posts' top and bottom for hanging the panels. For strength these middle posts have a 1.22-m piece of 5-cm channel iron welded on the base to form a T, while the four corner posts have a 15.2-cm square of 0.6-cm thick steel plate for a base. The corner posts each have four pairs of hooks, but the pinnate pairs at the top or bottom of the posts are not the same height. This arrangement aids in erecting on uneven ground. Pen size is not restricted to 8.56-m squares as any number of panels may be added to give any reasonable size.

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Special Note: Metric Conversions
1 centimeter equals .3937 inches
1 meter equals 39.37 inches
1 meter equals 3.28 feet
1 kilogram equals 2.2 pounds

Portable enclosures made by linking eight 4.28-m galvanized steel gates offer a versatile method of confining livestock for various grazing treatments.

Middle posts have two pairs of hanging hooks with a piece of channel iron welded on the base to for a T.
season, etc., that they have been grazed. This 3-year cycle is repeated twice.

One steer is put in an enclosure with adequate water and allowed to graze. Depending on intensity of grazing desired and the amount of herbage present, one steer may remain from 6 to 72 hours in an enclosure. Although one person can do it, moving the enclosures is best done by two people and requires about 15 minutes.

When cattle are left unattended in isolated areas, the sturdy galvanized steel gate enclosures offer a more reliable method than electrified barbed wire. Materials for each enclosure cost approximately $240, and with proper care they will last for many years.

### Literature Cited


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Newest in the Symposium Series published by the Society for Range Management:

**Special Management Needs of Alpine Ecosystems**

edited by Douglas A. Johnson

This publication presents six papers given at a special symposium presented at the annual meeting of the Society for Range Management in Casper, Wyoming, in February, 1979. Titles include:

- Alpine Ecosystems of Western North America
- Physiological Responses of Plants in Tundra Grazing Systems
- Range Management in the Alpine Zone
- Hydrologic Aspects Related to the Management of Alpine Areas
- Revegetation of Disturbed Alpine Rangelands
- Future Management and Research Needs in Alpine Ecosystems

Extensive bibliographical material extends the value of the papers, which present current information about the mysterious world of the alpine tundra. Increased demands for food and fuel have created greater pressure on these fragile lands, and so current information about them would be of value to those responsible for their use and reclamation, environmentalists, research students, and individuals interested in an unusual and fascinating ecosystem.