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# A PRACTICAL METHOD OF ESTABLISHING UNIFORM UNITS FOR CATTLE RANCH COSTS

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To determine representative cattle costs on a unit basis not only necessitates a workable method for translating the different classes into a common unit, but it must also take into account with reasonable accuracy the time those various classes, or any part of them, were included in the herd.

The opening inventory of a cattle herd is made up of certain definite classes, such as cows, calves, yearlings, bulls, etc The complexion of the herd is constantly changing, depending upon what transpires during the year. Newly born calves are branded and added to the herd when weaned, cattle are purchased, sold, and slaughtered, all of which changes the set-up of the cattle herd. The closing inventory presents a new and different aspect. Neither the opening or closing inventory represents the cattle herd as carried throughout the year.

In order to obtain costs, calf crop, and death loss percentages which are comparable between ranches, a common basis must be established, involving both the number of head of cattle by classes and the total number of cow units on the ranch a full year The number of cattle in any class or group of classes carried on the ranch a full year is termed Occupancy Head The occupancy head of each class of cattle is then translated into Cow Units.

A cow unit is a mature cow on the ranch a full year. The classification of the cattle herd and the unit values used follow:

| | Classification | | Unit Values |
|---|---|---|---|
| 1 | Cow of breeding age | equals | 1 cow unit |
| 1 | Branded calf or weaner | " | ½ Cow unit |
| 1 | Yearling heifer | " | 3/4 cow unit |
| 1 | Yearling steer | " | 3/4 cow unit |
| 1 | Two-year steer | " | 1 cow unit |
| 1 | Beef steer (feed lot) | " | 1¼ cow units |
| 1 | Bull | " | 1½ cow units |

The following table presents a picture of the changes which are liable to occur during the year on a cattle ranch. It also converts the cattle by classes into occupancy head and cow units.

The numbers of cattle by classes on hand at the beginning of the year are multiplied by 12, giving cattle months as of January 1st, on the assumption that such cattle will be carried throughout the year. Those purchased and branded during the year are likewise translated into cattle months from the time acquired until the close of the year. Where calves are branded throughout the year, the classification "Branded Calves and Weaners" represents on an average calves six months of age. Under these conditions the total calf branding for the year, which in this instance was 292 head, divided by 2, gives 146, the approximate number of six months old calves which came into the herd during the year. Cattle months January 1, plus cattle months for those purchased and branded, gives Gross Cattle Months, covering those on hand and those coming into the herd.

Cattle sold and slaughtered during the year are also converted into cattle months, covering the period from the time they are disposed of until the end of the year, which is termed Cattle Months Off the Ranch. Gross Cattle Months, less Cattle Months Off the Ranch, equals Net Cattle Months, which when divided by 12 gives the occupancy head for the year.

Occupancy head for the year are converted into cow units by multiplying the number of each class by the unit value for that class.

A practical application of this method shows how calf crop percentage, death loss, and carrying cost are affected by changes as they occur in a cattle herd during the year.

## Calf Crop

At the close of the year, when calves are branded year long, calf crop percentage is computed by dividing the number of calves branded during the year by the occupancy head of breeding cows, rather than the number of head of breeding cows on hand at the beginning of the year. In the foregoing table, calf crop on the basis of occupancy head is 292 ÷ 470, or 62%. Calf crop on the basis of breeding cows on hand January 1, is 292 ÷ 510, or 57.2%. The latter percentage is not representative of what happened during the year. Even if calf crop percentage on all ranches were computed by the latter method the results one year with another and between ranches would not be comparable because purchases and sales, which vary in numbers and by seasons, would not be accounted for. When seasonal breeding is practiced computing calf crop percentage is greatly simplified since it may be computed on the basis of breeding cows actually on hand and given an opportunity to calf during the calving season.

## Death Loss

Death loss percentage is computed by occupancy head for the same reasons. Death loss in this instance is calculated as follows:

On hand January 1 ---------------- 1212
Branded during the year ---------- 292
Purchased during the year -------- 15

Total handled ------------- 1519

On hand December 31 -------------- 1062
Sold and slaughtered ------------- 435

Total accounted for ------- 1487

Died or Missing ----------- 32

The number died or missing - 32, divided by occupancy head for the year - 1109, equals 2.90% death loss. Death loss percentage on the basis of cattle on hand at the beginning of the year would be 32 ÷ 1212, or 2.6% Death loss percentage by occupancy head takes care of cattle as acquired and disposed of during the year. In this instance only a slight difference in death loss percentages is shown, since cattle on hand at the beginning of the year and occupancy head for the year do not differ greatly. However, if cattle sales had been made early in the year occupancy head would have been reduced accordingly, making a material difference in the death loss percentage.

## Carrying cost

Cattle ranch costs such as carrying cost, labor, feed cost, etc., are computed by dividing these costs by the number of cattle on the ranch a full year, converted to cow units. Carrying cost is the annual running expense per unit. For this sample herd, with a running expense of $11,343.75, the carrying cost per cow unit is $11,343.75 ÷ 907.5, or $12.50. Carrying cost based on cow units on hand January 1 would be $11,343.75 ÷ 1020.75, or $11.11. Based on the number of cattle on hand January 1, it would be $11,343.75 ÷ 1212, or $9.36 per head. It is obvious that neither the $11.11 or the $9.36 is a representative cost for the cattle herd as handled throughout the year. The method which gives a carrying cost of $12. per cow unit takes care of changes made in the cattle herd and produces results comparable one year with another, and with other ranches.

The unit values used heretofore as applied to occupancy head convert the cattle herd to cow units and set up a uniform basis for calf crop and death loss percentages and for ranch costs which are comparable one year with another and between ranches. The results are representative since the cow units are derived from occupancy head of cattle by classes, which takes into account cattle on hand January 1 as well as those acquired and disposed of during the year.

The sample used in this instance shows the production and sale of cattle in the usual manner, excepting that 141 yearling steers were sold on account of a feed shortage due to drought. In this case there were 1212 cattle on hand at the beginning of the year and 1062 at the close of the year. The occupancy head for the year was 1109, or the equivalent of 907.5 cow units.

In addition to the usual beef turn-off other cattle are frequently either purchased or sold, changing the complexion of the herd carried throughout the year. If the transaction includes breeding cows, calf crop percentage is changed accordingly. Under such conditions, if occupancy head is not accounted for it can be readily seed that final results would not be representative of what actually happened. In that case only such ranches as produce, sell, and maintain a constant breeding herd in approximately the same way year in and year out should be used in making up a group.

The method of figuring cow units by occupancy head handles the unusual occurrences which frequently arise on cattle ranches and broadens the field for the selection of ranches that can be used in making up averages.

The importance of selecting and establishing a common unit is well known to economists and students of farm management. The samples selected and the various units set forth in livestock bulletins are no doubt representative and accurate for the specific purposes intended. However, since a standard unit is not used in livestock publications the results, while accurate, are not comparable. A standard unit, acceptable to all projects, would accomplish the purpose of the publication and at the same time yield comparable results and promote a clearer understanding of projects. The acceptance of such a basic unit would minimize risk of error and eliminate duplication of effort spent in rearranging figures on a comparable basis. Final results such as calf crop, death loss, carrying charge, and production costs would be readily comparable regardless of how the accounts are grouped or made up.

This system suggests a method of establishing the cow unit as a uniform basis for cattle production studies. It may be made more elaborate and exact, but this form is considered sufficient for all practical purposes.