

## Discussion of Gross Revenue Production Per Acre of Pasture

### Background

The ranching business in Hawaii has over the past decade shifted predominantly to a cow-calf operation producing weaned calves that are shipped to the mainland. The basic annual gross revenue stream for the average rancher is the sales revenue from those shipped calves. There are many highly variable factors which influence that revenue stream. A few of the more significant variables include:

#### 1. Carrying Capacity of the Pasture Land

The best of un-irrigated pasture can support one animal unit per year on less than 2.5 acres (i.e. "Good" pasture). "Average" pasture can support one animal unit on 2.5 to 10 acres and in sparse, seasonal, or otherwise "poor" pasture land, it can take from 10 to over 30 acres to support one animal unit on an annual basis.

#### 2. Weather/Feed Conditions

Along with market price, this is the biggest variable which impacts the rancher's gross revenue stream. For example, weather and feed conditions impact:

- (a) Calving rates (or "Calf Crop")- A well managed cow herd on excellent feed conditions might approach a 90% calf crop while a cow herd suffering from poor feed conditions and related stress, particularly if for a prolonged period, can experience a drop in calf crop to below 60%.
- (b) Weaning/shipping/marketable weight of calves - Calves weaned off well nourished cows on good feed can average over 450# while calves during drought periods off of poorer condition cows can drop to under 275#.

#### 3. Market price/sales revenue per calf

In the past seven years, we have seen huge swings in the sales value of a weaned 8-month old) calf in Hawaii ranging from a high of over 80¢ per pound to a low under 30¢. The cattle market is typically cyclical and the variations are an expected part of the business.

Analysis:

Attached is a simplified presentation intended to illustrate the range of gross revenues a rancher may expect to realize on a per-acre basis from the production of calves in a typical cow-calf operation according to by real property tax pasture assessment classifications (Good, Average and Poor). The analysis considers the best and the worst set of assumptions in terms of carrying capacity, calf crop, sales weight, and market price. It also assumes that in the average cow-calf production herd, approximately 70% of the animal units are breeding (brood) cows. The balance are non-calf producers (i.e. bulls, culls, and young replacement heifers). Therefore not all “animal units” are producing calves.

The analysis concludes that the gross annual revenue per acre from a cow-calf operation based on the above assumptions can range from:

Good Pasture:	\$226.80 to \$13.86 per acre annually
Average Pasture:	\$ 90.72 to \$ 3.48 “ “ “
Poor Pasture:	\$ 27.72 to \$ 1.17 “ “ “

In terms of real property taxes paid as a percent of gross revenue per acre, this analysis concludes taxes paid for pasture land represent:

Good Pasture:	R. P. Taxes equal .93% to 15.45% of gross revenue
Average Pasture:	“ “ “ .66% to 17.24% of gross revenue
Poor Pasture:	“ “ “ .62% to 11.96% of gross revenue

We should note that this simplified analysis does not attempt to address all economic factors. For example:

- (a) There are some additional revenues from the sale of culled cattle for their salvage value, although this is a fairly nominal and highly variable revenue source.
- (b) Operating expenses often exceed gross revenues leaving the rancher in a net loss situation;
- (c) The poorer pasture areas, in addition to being the lowest in terms of gross revenue generation are also the most expensive per animal unit to operate due to relatively high costs often associated with fencing, transportation, water systems, security and feed supplementation.

Finally, we should point out several basic “industry-wide” challenges Hawaii’s cattle industry faces.

1. The costs to Hawaii producers of transporting Hawaii’s livestock to mainland markets are high (i.e. 20¢ to 30¢ per pound) compared to the livestock’s value once on the mainland (50¢ to \$1.10 per pound).
2. Over the past 15 years or so, Hawaii has not had economically viable local outlets for its beef.
3. Hawaii’s cattle producers face substantially more (i.e. an estimated 12 times more) competition from foreign beef imports than does the continental US beef industry.
4. Environmental regulations continue to become more predominant and restrict operating flexibility.
5. Ranchers and farmers continue to lose Ag land to urban and other development pressures.