The Use of Silage in Year-Round Feeding System: The Case in Sarangani Agricultural Company, Inc. cattle operation in Southern Philippines

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1. Introduction

Sarangani Agricultural Co., Inc.(SACI) is a diversified all-Filipino company offering a diverse range of agricultural products with base office in Maribulan, Alabel, Sarangani Province, Philippines. Over the years, it has distinguished itself as the premier cattle producer in the country, maintaining a herd of 5,000 purebred and graded American Brahman cattle with upgraded horses raised in General Santos City, Malungon and Alabel, all located in Southern Mindanao. From Sarangani Brahman, SACI has expanded into production of banana, pummelo and bangus, tilapia, prawn and specialty fishes. It has initiated vegetable production and tree planting for industrial uses.

Along with the breeding of quality Brahman cattle, SACI has continuously developed feeding technologies using farm byproducts such as banana rejects, pineapple pulp, corn (maize) stover and cobs, rice straw, Ipil-ipil and silage among others. This paper gives special reference to our experience with corn silage in Alabel farm.

2. Cattle Feeding Management in the Farm

Two systems of feeding, grazing and confinement or feedlot, are used in the farm. The breeding herd which at present is composed of 230 cows and 24 bulls along with 140 calves and 96 yearlings are grazed in 186 ha and 223 ha of Para grass (*Brachiaria mutica*)/Leucaena and native pastures, respectively. Other groups of animals (marketable bulls, marketable heifers, culled cows from ranch operation, fattening bulls and fattening steers) are kept in the feedlot.

3. Planting and preparation of corn for silage

Corn is planted in 25 ha throughout the year where four crops are harvested with irrigation. Following each crop of corn in a particular area, land is prepared and planted with new crop after 15 days and 22 days, respectively, from harvesting. Each crop is harvested at 75 days after planting by tractor mounted harvester-chopper machine, dumped and piled in stack in an area near the feedlot. The area for the stack pile is lined with plastic sheets before dumping the chopped corn plants. The stack pile in a day's harvest is immediately covered with special and strong plastic sheets after compacting by several passings of a tractor over the pile.

Recovery of ensiled materials ranges from 80 to 92 percent. The variation is related to age of corn at the time of harvest. Corn harvested at 80 days from planting has higher recovery compared to those harvested at 70 days. However, ensiled younger corn is more palatable and has less wastage during feeding.

4. Utilization of corn silage

Ensiled corn is generally kept from 90 to 100 days during the rainy season (July to October) but shorter in the dry season, sometimes for only 18 days when severe drought occurs, like during the *el niño* months in 1997/1998. One time we experienced shortage of corn silage for 14 days, thus we harvested 38 ha of Para grass as green-chop in the farm (at the expense of our breeder herd) and purchased 65 tons of green-chop corn to support the animals in the feedlot.

4.1. Feeding of corn silage

Corn silage is the principal feed given to cattle kept in SACI feedlot. Below are the general feeding schemes used for different groups of animals per head per day.

Group	Corn Silage (kg)	Concentrate (kg)	Molasses with 10% urea (kg)
Marketable bulls	18	2	-
Marketable heifers	17	2	-
Fattening bulls (rejects)	20	4	1
Fattening steers	20	4	1
Culled cows	20	-	1

Corn silage is important in maintaining well-conditioned and uniform breeder heifers and bulls that we offer for sale to customers. It is also an important tool for conditioning culled thin cows (with average liveweight of 280 kg) from the ranch. If these cows are sold immediately to butchers, the price will only be 30 pesos per kg liveweight (US$1=PhP39.8 current exchange rate)

but if we passed them to the feedlot on corn silage-based ration, these cows gain 1.6 kg/hd/day in 2 months and are sold at 36 pesos/kg.

For fattening steers and bulls, feeding of concentrates is done by mixing them with the silage to obtain uniform daily gain. Earlier observation showed that if they are top-dressed over the silage the more aggressive animals get more access to the concentrate and perform better. Our concentrate mixture is composed of rice bran, palm kernel cake andIpil-ipil plus mineral supplements.

Corn silage is crucial to our Alabel cattle operation, allowing us to maintain a populationof 410 head of two-year old bulls and heifers, culled cows and fattening bulls and steers at any given time in the feedlot in conjunction with the breeding herd raised in pasture.