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SDSU PUREBRED BEEF HERDS

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CATTLE 91-2

A herd of purebred Angus and Simmental cows used for teaching, research and extension activities is maintained at the Cow-Calf Teaching and Research Unit near the SDSU campus. Besides use in the classroom, cattle are used for numerous student activities, field days and 4-H, FFA and other educational events. In addition to providing research information and an opportunity for education, this herd provides a stimulus for interactions between students and faculty and an avenue for communication between faculty and producers in the region.

Figures 1 to 5 show the genetic change accomplished in this herd as expressed by expected progeny differences (EPDs). These figures represent

the regression of EPDs with year of birth for females raised in the herd that are still present. This probably underestimates actual change since older females have been culled based on their production. For the Angus herd genetic potential for growth rate (Figure 1) and milk production (Figure 2) have increased dramatically. At the same time, average birth weight EPDs have decreased slightly (Figure 2). For the Simmental herd, emphasis has been placed on increasing growth rate while trying to decrease birth weight and improve direct and maternal calving ease EPDs. Figures 3 through 5 reflect that selection emphasis. The decrease in milk EPDs (Figure 3) is a result of placing more emphasis on other traits as long as milk production is at least near average for the breed.

Figure 1. Angus trend for weaning and yearling weight EPD.

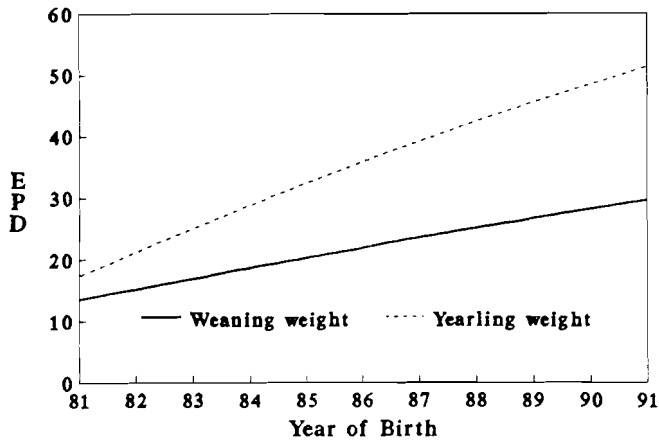
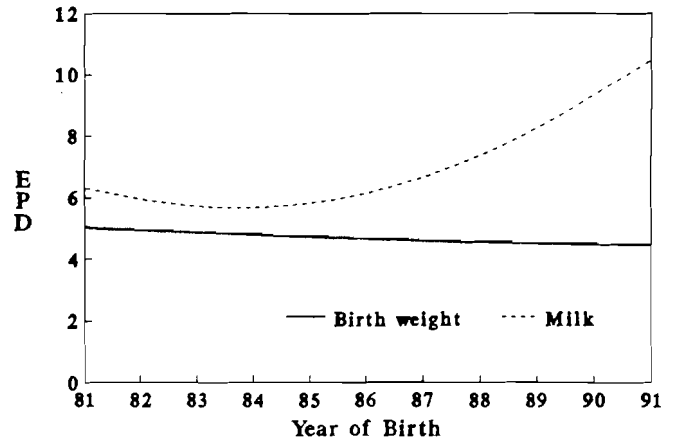


Figure 2. Angus trend for birth weight and milk EPD.



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Figure 3. Simmental trend for birth weight and milk EPD.

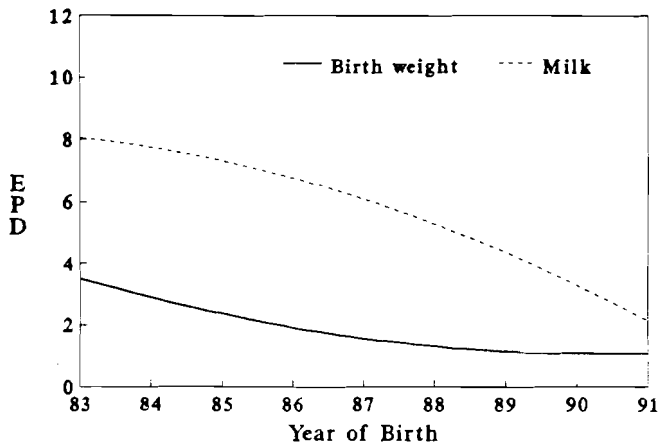


Figure 4. Simmental trend for weaning and yearling weight .

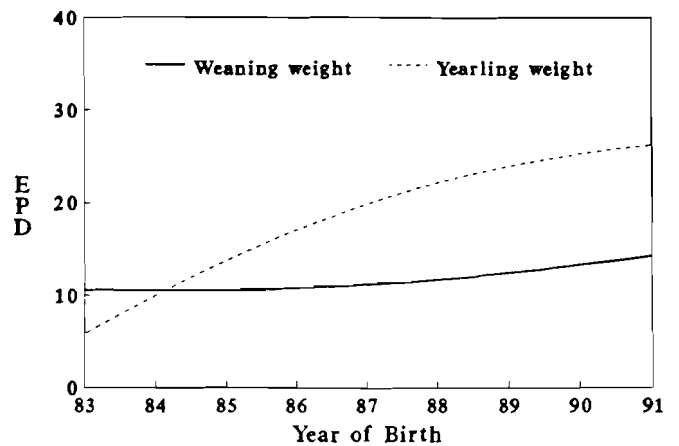
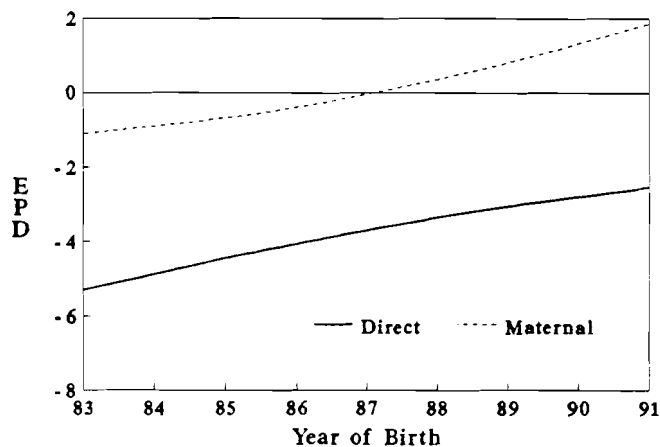


Figure 5. Simmental trend for calving ease EPD.



To maximize the herd's value as a teaching resource, a variety of sires that represent differences in calving ease, growth rate, maternal value and mature size within their respective breed are used. This enables us to provide examples of the genetic differences that are useful to the commercial beef cattle industry in this region. Although it is necessary to maintain a variety of cattle within each breed, our general goal is to produce a high percentage of bulls that fit into one of three categories: 1) High growth and

milk Angus bulls to breed to cows; 2) Low birth weight Angus bulls with above average growth and milk to breed to yearling heifers; and 3) Moderate framed, above average growth Simmental bulls to use on cows that can be used as terminal sires or to produce replacement heifers. Specific goals for the bulls produced are listed in Tables 1 and 2. The average expected progeny differences for the AI sires used in 1991 to get closer to those goals are listed in Tables 3 and 4.

TABLE 1. GOALS FOR THE MAJORITY OF ANGUS BULLS PRODUCED

	Low birth weight bulls	High growth and milk bulls
Birth weight EPD	< + 2	< + 6
Weaning weight EPD	> + 25	> + 30
Milk EPD	> + 10	> + 10
Yearling weight EPD	> + 40	> + 50
Frame score	5.5-6.5	6.0-7.5
Yearling scrotal circumference	> 34 cm	> 34 cm

TABLE 2. GOALS FOR THE MAJORITY OF SIMMENTAL BULLS PRODUCED

Calving ease EPD, heifers	> - 2
Birth weight EPD	< + 1
Weaning weight EPD	> + 10
Yearling weight EPD	> + 20
Maternal calving ease EPD, heifers	> - 1
Milk EPD	> - 2
Frame score	6.5-7.9
Yearling scrotal circumference	> 34 cm

TABLE 3. AVERAGE EPDS OF ANGUS AI SIRES USED IN 1991

	Used to produce low birth weight bulls	Used to produce high growth and milk bulls
Birth weight	- 1.5	+ 4.2
Weaning weight	+ 26	+ 40
Milk	+ 18	+ 16
Combined maternal index	+ 31	+ 36
Yearling weight	+ 50	+ 68

TABLE 4. AVERAGE EPDS OF SIMMENTAL AI SIRES USED IN 1991

Calving ease, heifers	+ 1.2
Birth weight	- 1.1
Weaning weight	+ 17.3
Yearling weight	+ 32.4
Maternal calving ease, heifers	+ 1.0
Maternal weaning weight	+ 13.2
Milk	+ 4.5

In the recent past, yearling bulls produced have been used in other SDSU crossbred research herds with some bulls offered for sale. If you are interested in

receiving information on the bulls for sale each spring, contact Kevin Vander Wal or Dick Pruitt of the Animal and Range Sciences Department.