

## Research Conducted on Charolais Cattle

Charolais bulls are capable of mating and settling cows at younger ages than most cattlemen realize according to research conducted at Pennsylvania State

University. In trying to determine the earliest possible time that young beef bulls could have semen collected for use in artificial insemination, the resea-

chers discovered that Charolais bulls attain sexual maturity a month sooner than the Hereford or Angus bulls they had studied at an earlier date.

What this means for the purebred Charolais breeder is that he can start to progeny test prospective herd sires at a relative young age and have calving data, and in some cases weaning data, on the offspring of the bulls before the bull is two years old. This increased production comes as a result of Charolais bulls being more fertile and more active at younger ages than other beef breeds.

Twenty-seven Charolais purebred bull calves were donated by breeders of Texas, Pennsylvania, New York, and Maryland, at the average age of 27 weeks. Nineteen bulls had been creep-fed prior to arrival at which time each bull was placed in his own box stall with an adjoining exercise paddock.

With nutrition being an important factor in the development of young bulls, all bull were fed a high energy concentrate mix (13 percent crude protein and 74 percent TDN) and timothy-alfalfa hay twice daily. The concentrate mix was fed free choice with hay limited to no more than seven pounds per day.

The time at which a bull attained sexual maturity was defined by researchers as the age when the first ejaculate was obtained which contained a minimum of 50 million sperm with at least 5000,000 (10 percent) showing progressive motility.

The Charolais bulls used in the study started reaching this stage of sexual maturity at 33 weeks of age, six weeks a head of the first Hereford or Angus bulls. The age at which Charolais bulls reached sexual maturity was significantly earlier than the other breeds with the Charolais bulls averaging 41 weeks of age while the other beef breeds average 45 weeks of age.

Charolais bulls attained weights of almost 200 pounds heavier than the Hereford and Angus bulls when they reached sexual maturity. Average weights for the Charolais bulls was 881 pounds with a range from 586 pounds to 1100 pounds. Hereford and Angus bulls averaged 697 pounds with a range from 472 pounds to 898 pounds. The Charolais bulls averaged 1146 pounds at one year of age while the Hereford and Angus bulls average 817 pounds.

Seven of the young active Charolais bulls produced first ejaculates which meet the minimum requirements that froze satisfactorily. This is an indication that the semen produced by these young Charolais bulls can be used at younger ages than many people first thought. Semen from these young bulls can be used successfully in artificial insemination programs.

With the increased use of Charolais bulls in commercial cow herds across the country the results of this research project will prove invaluable. Young bulls can now be tested with the superior sires receiving heavy use and the inferior sires being eliminated from breeding programs. Purebred breeders can supply other purebred breeders with proven sires when a bull reaches two years of age thus increasing productivity in the beef industry.

The research also showed at age at sexual maturity was not significantly correlated with either 100-day average daily gain or body weight at 365 days of age. Neither was the age of body weight significantly correlated with semen characteristics or freezeability.

Perhaps one of the most important findings of this

research is that the commercial cattlemen can use bulls that have been tested, the result of being more fertile and active at younger ages. They will be able to select replacement bulls on the performance of the bulls progeny and still acquire a young sire. The commercial cattlemen will be able to select bulls on calving ease, weaning weights, and gainability of his calves because the bulls he would be using have had their offspring tested.

Another distinct ad-

vantage the Charolais bull has is the added weight at one year of age that is inherent in the Charolais breed. The advantage of size will put the Charolais bulls out in commercial herds working in working condition as early as 15 months of age and be able to withstand the harsh conditions of much of the range country that is typical of commercial cattle operations. The commercial cattlemen will have the use of good sized bulls that will also increase pounds per calf in their commercial herds.

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