

Study to measure the effect of implanting Holstein steers at various stages of growth and the impact on weight gain and interference with subsequent implants

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Introduction

The objective of this study is to quantify the effect of using Component E-C and Component E-S implants in Holstein steers from 50 days of age to 210 days of age. The use of growth promoting implants has been shown to be a beneficial practice in increased rate of gain, increased feed efficiency, and improvement in carcass quality. There are many techniques and schemes for using the various implants to their best advantage. There have not been many published studies concerning the use of implants in young Holstein steers. It has not been established that young Holstein steers benefit from this practice. It has been argued that early implants will lessen the effect of later implants given to Holstein steers.

Materials and Methods

Holstein bull calves three to seven days of age sourced from sale barns in the eastern United States were utilized in this study. Three hundred sixty-five animals were raised at one location (site 1) and two hundred seventeen animals were raised at a different location (site 2). Calves were weighed on arrival, ear notched for BVD, and given unique identification. Individuals with a positive result on BVD ear notch were not enrolled in the study and were promptly removed from the premises. The calves were raised according to the farm's standard protocols. On day 50 the calves were weighed again. Treatment groups were randomly assigned using Microsoft Excel. Half of the group received Component E-C and the other half received a sham implant. The calves continued to be raised according to the farm's standard protocol. On day 120, cattle were weighed again, and calves were either implanted with Component E-S or given a sham implant. Treatment groups were randomly assigned using Microsoft Excel. Half of the previously implanted calves received an implant (group A), and half of the previously

implanted calves received a sham implant (group C). Half of the previously sham implanted calves received an implant (group B), and half of the previously sham implanted calves received another sham implant (group D). Calves were weighed again at day 210. Weight differences between groups were calculated and statistical significance was determined by means analysis.

Results

At site 1 all the treatment groups were significantly different from group D at a 1% significance level on day 210. For site 1, group A had a 41.0 lb advantage over group D, group A had a 7.3 lb advantage over group B, and group A had an 11.4 lb advantage over group C. At site 2 only group A was significantly different from group D at a 1% significance level on day 210. For site 2, group A had a 38.5 lb advantage over group D, group A had a 15.8 lb advantage over group B, and group A had a 14.8 lb advantage over group C.

Significance

Both site 1 and site 2 showed a statistical advantage to implanting Holstein steers at day 50 with Component E-C, and implanting with Component E-S at day 120 versus not implanting at all. While there is a numerical advantage to using one implant before day 210, results are not always statistically significant. Based upon the results of this study, there is a statistical advantage to implanting Holstein steers at day 50 with Component E-C and implanting at day 120 with Component E-S. The early implant had no negative effect on the later implant.