Immunization against Gonadotropin-Releasing Hormone in Female Beef Calves to Avoid Pregnancy at Time of Slaughter

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Abstract: Precocious puberty in beef heifers can result in unwanted pregnancies due to accidental breeding by farm bulls. Inbreeding, premature calving followed by dystocia and a high stillbirth rate are the consequences. The aim of the study was to postpone puberty in female beef calves housed in Swiss mixed herds to avoid pregnancy until scheduled slaughter at 11 months of age. We used a vaccine (Improvac®) that induces antibody production against sexual hormones, thereby suppressing the reproductive cycle. Monthly progesterone analysis in blood was performed to decide whether the cycle had already started. The results proved, that vaccinated female beef were not coming in heat until 11 months of age compared to the unvaccinated control group, which came in heat earlier. In conclusion, vaccination with Improvac® is an animal-friendly, non-invasive and reliable method to avoid early pregnancy in heifers as well as the slaughter of pregnant cattle.

Keywords: cattle; anti-gonadotropin-releasing hormone (anti-GnRH); Improvac®; immunocastration; puberty; progesterone; cortisol

1. Introduction

The herd size of beef cow-calf operations in Switzerland are small where male and female animals of all age groups are housed together. There is often no possibility to split up the herd (only one free stall housing available, not many different pastures per farm).