

EXAMINATION OF TRENBOLON ACETATE RESIDUES AFTER IMPLANTATION OF REVALOR S IN FATTENING STEERS

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BACKGROUND Anabolic implants used to improve growth rate and feed efficiency of cattle during fattening thus resulting economic benefits. One of the growth promoters used in raising animals for slaughter is androgen - trenbolon acetate (TBA), whose active component is trenbolon (TBOH). It is most frequently applied alone or in combination with estrogen - estradiol. In that case, according to the investigation of Gerken et al., (1995) and Bartlea et al. (1992), its effect is intensified. Many investigations are performed with the aim to develop new methods or to improve the present methods for TBOH determination (Degan G. et al., 1989; ; Daeseleire E. et al., 1991; Bagnati R. and Fanelli R., 1991; Lagana A. and Marino A., 1991; Daeseleire E. et al., 1992; Hevitt et al., 1993).

OBJECTIVES The aim of this work is to examine the residues of trenbolon acetate, after its application in combination with 17- β estradiol in fattening steers of Simmental breed, and to establish the time of their excretion from the organism.

METHODS The examinations were performed on a private cattle farm. Ten steers of Simmental breed, eight months old, were assigned randomly. The first five steers were used as a control group (no implant), and the other five were treated with Revalor S. The Implant Revalor S (24mg of 17- β estradiol and 120mg of trenbolon acetate) was surgically implanted under the skin behind the ear. Sixty days after implantation, analysis of faeces and urine did not show any excretion of trenbolon residues from the organism. Thus, reimplantation was done. The samples of faeces and urine were always taken at the same time. The steers were slaughtered 120 days after the first implantation of anabolic and the residues of trenbolon were examined in muscle tissue, as well. For determination of TBOH residues, we used the HPLC method developed by Laitem et al., (1978) and the Laboratory residue analysis (Bilthoven, Holland). The procedure was modified in our laboratory to achieve the necessary analytical requirements. The experiment (method) involve hydrolysis of the sample by means of enzymes to release the bound trenbolon. The TBOH was extracted from matrix and passed through the HPLC column. The experimentally established detection limit was 5 μ g/kg; the retention time was 5 minutes. With the aim to determine the recovery percentage, the blank and spiked samples were analyzed in conjunction with the samples we obtained from treated animals. The recovery we obtained was approximately 85%.

RESULTS AND DISCUSSION The established quantities of TBOH residues in faeces and urine are presented in Figures 1. and 2. The residues of anabolic and the elimination rate of residues from the body depends on the way of anabolic administration, composition implant, animal type and the expired time after drug application (Karg H. et al., 1984).

From our examination, it is evident that there is a huge variability of TBOH concentration in urine and faeces. Similar results were obtained by other investigators as well (Karg H. et al., 1984; , Henricks D.M., 1981). In addition, higher quantity of TBOH were obtained in samples of faeces in relation to urine. Maximum quantities of TBOH residues in both excretions were established 24h, namely 48h after the application of Revalor S and they are in accordance with the findings of Karg et al. (1984). However, sudden decrease of TBOH concentration is observed in faeces 40 days after implantation and in urine after 15 days. After slaughter of steers, TBOH residues were not established in muscle tissue. It can be concluded that TBOH excretion from the organism occurred prior to steer slaughter.

CONCLUSION On the basis of the obtained results it can be concluded that the excretion of TBOH in fattening steers of Simmental breed happened two months after the application of Revalor S. Having in mind that there is variability in concentrations, it is necessary to repeat the experiment with a higher number of animals.

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Fig. 2 Residues of TBOH in faeces of 5 stears, implanted with 24 mg 17β -estradiol and 120 mg TBOH

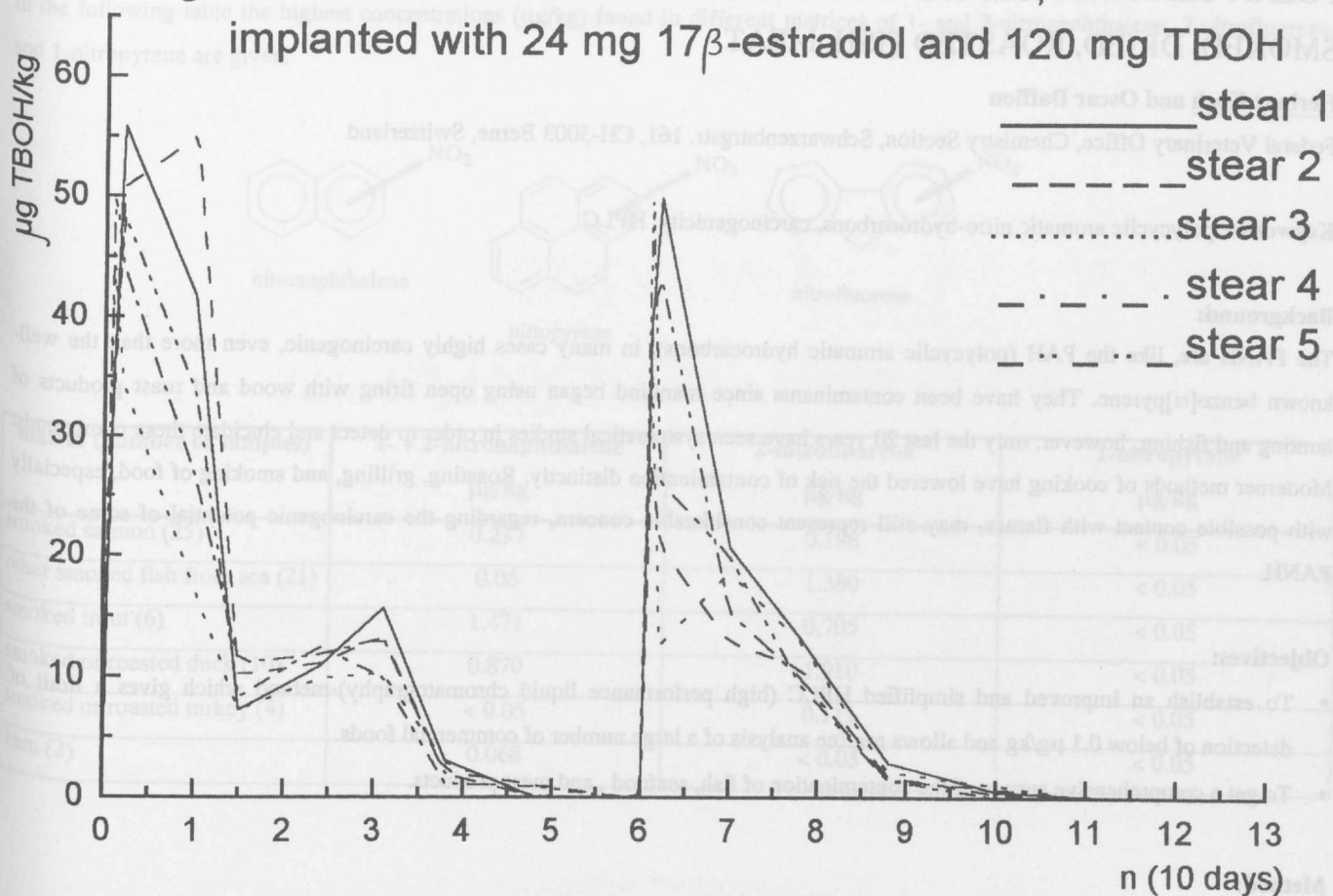


Fig. 1 Residues of TBOH in urine of 5 stears, implanted with 24 mg 17β -estradiol and 120 mg TBOH

