

nje količine hidroksiprolina.

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The effect of subchronic ractopamine treatment on chemical composition and levels of remains in pig meat

Summary

The aim of this paper was to research the effect of β -adrenergic antagonist ractopamine on chemical composition of pig meat and to determine the level of accumulated remains after applying anabolic treatment on pigs as experimental animals. The treatment was conducted by oral use of subchronic dose of ractopamine of 0.1 mg/kg of body weight daily during the period of 28 days. At the end of the treatment, a chemical composition was researched by determining shares of water, raw proteins, fat and collagen in the meat sampled from the treated animals on the first, third and eighth day after the treatment and on samples of control animals as well, by using standard methods of analysis. By using a validated immunoenzymatic method in meat samples, concentrations of ractopamine remains were determined. Research results haven't pointed to significant changes in the chemical composition of meat of the treated animals and a weak cumulation of ractopamine remains in meat with peak mean concentration values from 391 ± 62 ng/kg and 450 ± 65 ng/kg on the first day after the treatment. On the third and eighth day after the treatment, ractopamine concentration values in all the analyzed samples were equal to detection limit (300 ng/kg) of the test method or the remains weren't detected.

Key words: ractopamine, anabolic treatment, pigs, chemical composition of meat, remains in meat

Wirkung der subchronischen Anwendung von Raktopamin auf chemische Zusammensetzung und das Niveau der Reste im Schweinefleisch

Zusammenfassung

Das Ziel dieser Untersuchung war die Wirkung des β -adrenergischen Raktopaminagonisten auf die chemische Zusammensetzung des Schweinefleisches zu prüfen, und das Niveau der Reste zu bestimmen, die sich darin nach der Anwendung der anabolischen Behandlung auf Schweinen als Versuchstieren kummulieren. Die Behandlung wurde durch die Anwendung der subchronischen Raktopamindose von 0,1 mg/kg der Körpermasse während 28 Tage oral durchgeführt. Nach Behandlungsende wurde in Fleischmustern, der durch die Musterproben trätierten Tiere, am ersten, dritten und achten Tag nach der Behandlung, sowie in Mustern der Kontrolltiere, durch die Anwendung von analytischen Standardmethoden, die chemische Zusammensetzung bestimmt, u.zw. durch den Anteil von Wasser, Rohproteinen, Fetten und Colagen. Durch die Anwendung der validierten Immunenzymmethode wurden in Fleischmustern Konzentrationen der Raktopaminreste bestimmt. Die Untersuchungsergebnisse haben nicht auf bedeutende Änderungen in der chemischen Fleischzusammensetzung der trätierten Tiere hingewiesen. Es wurde eine schwache Kummulation der Raktopaminreste im Fleisch festgestellt, mit Spitzen-mittel-konzentrationswerten von 391 ± 62 ng/kg und 450 ± 65 ng/kg am ersten Behandlungstag. Am dritten und achten Tag nach der Behandlung hatten die Raktopaminkonzentrationen in allen analysierten Mustern die Werte etwa gleich mit dem Limit der Detektion (300 ng/kg) der Prüfungsmethode oder die Reste wurden nicht detektiert.

Schlüsselwörter: Raktopamin, anabolische Behandlung, Schweine, chemische Fleischzusammensetzung, Reste im Fleisch

Effetto dell'applicazione subcronica di rattopamina alla composizione chimica e al livello dei residui nella carne suina

Sommario

Lo scopo di questa ricerca era esaminare l'effetto di agonista di rattopamina β -adrenergica sulla composizione chimica di carne di maiali e determinare i livelli di residui che si accumulano dopo l'applicazione del trattamento anabolico sui maiali che servono come animali di laboratorio.

Il trattamento è stato fatto applicando la dose subcronica di rattopamina di 0,1 mg/kg del peso, oralmente, ogni giorno durante 28 giorni. Alla fine del trattamento, nei campioni degli animali trattati presi il primo, il terzo e l'ottavo giorno dopo il trattamento, e nei campioni dei campioni di animali appartenenti al gruppo di controllo, assieme all'applicazione dei metodi d'analisi standard, è stata esaminata la composizione chimica tramite la determinazione delle percentuali di acqua, le proteine crude e i grassi crudi, e anche il collagene. Dopo l'applicazione del validato metodo che include gli immunoenzimi, nei campioni di carne trattata sono state determinate le concentrazioni di residui di rattopamina.


I risultati di ricerca non hanno affermato i cambiamenti evidenti nella composizione chimica della carne di animali trattati, e anzi, è stata scoperta una debole accumulazione di residui di rattopamina nella carne con i valori massimi di percentuale media di 391 ± 62 ng/kg e 450 ± 65 ng/kg il primo giorno dopo il trattamento. Il terzo e l'ottavo giorno dopo il trattamento di concentrazione di rattopamina tutti i campioni analizzati hanno rivelato i valori approssimativamente uguali al limite di detezione del metodo di esame (300 ng/kg), oppure i residui non sono stati determinati.

Parole chiave: rattopamina, trattamento anabolico, maiali, composizione chimica di carne, residui nella carne

spontaneous reporting scheme in a European Union country – the UK, and schemes in other

countries. J. Vet. Pharmacol. Therap. 28, 149-170.

Dostavljeno: 29. studenoga 2010.

Prihvaćeno: 3. veljače 2011. 

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