Determination of elimination time of medicines from poultry products

T.I. FOTINA1*, H.A. FOTINA1 and B.T. STEGNIY2

1Sumy National Agrarian University, Ukraine
2Institute of experimental and clinical veterinary medicine, Ukraine
*tatiana@vcity.sumy.ua

The level of natural and adaptive immunity in poultry is decreasing lately due to the environmental issues. Level of diseases caused by different types of microorganisms including conditionally pathogenic microorganisms is rising (Fotina, 1999).

The great economical losses observed due to the poultry disease caused by Citrobacter, Klebsiella, Enterobacter, Yersinia, Serratia, Hafnia, Pseudomonas and others. There are several types of infections which can affect poultry and human beings at the same time. So poultry products (meat and eggs) contaminated by conditionally pathogenic microflora can be the source of infections, toxicosis and toxoinfections in human.

International standards have severe requirements for the sanitary examinations of any poultry products, which can't get to the market if they are “potentially contaminated” (Fotina and Fotina, 2002).

Raw material quality, production technology, slaughter technology, veterinary sanitary examination influence on the product quality. During sanitary examination of poultry carcasses it is necessary to pay additional attention to the carcasses from the infected farms because of the veterinary drugs which can be accumulated in the carcasses (Fotina and Fotina, 2002; Mittermayer, 1989).

So the aim of our research was to determine veterinary drugs residues in the poultry products.

Material and methods of research

We determined residues of medicines in liver, kidney, fat, blood and meat of poultry from the infected farms where different types of veterinary drugs were used. We analyzed our samples on the 20th day after last time of use of medicine in poultry.

On the farm they used cefotoxin, enrofloxacin, sulfaminometoxin, levomicetin and furazolidon. At the poultry houses 1, 2 and 6 complex probiotic “Bioflor” in dose of 0,1 ml per hen with the drinking water was used during 5 day with 10 days interval three times.

The level of medicines in samples was determined by use of high performance liquid chromatography on the Spectra-Physics Analytical, Spectra system P100 (USA) using detector (Spectra – 200, США).

Results of research

It was established that the poultry houses where the probiotic “Bioflor” was used mortality was decreased by 0.8% (p<0.05)in the comparison with other houses. No residues of probiotic was found in the poultry products beginning from the first day of our research.

It was established that during use of other antibacterial preparations positive results were also observed. Clinical signs of diseases were not observed. But residues of medicine were found in samples during 20 days of our analyzing.

The highest level of medicines in samples was found for nitrofuranes and particular furazolidon. On the first day after the last treatment of poultry it was found in liver and kidney at concentration 1455,0±1,9 – 2165,0±2,2 mcg/g, on the 10th day - 3,89±1,1 - 3,97±1,3 mcg/g, on the 20th day - 1,15±0,8 2,43±1,3 mcg/g.

All veterinary drugs can be accumulated in liver, kidney, fat most of all, than in blood and muscles. Slaughtering of poultry can be done only on the 11th days after the last treatment by enrofloxacin. We established that on the 10th day level of residues was normal 0,95±0,1 - 2,52±0,4 mcg/g, and o the 20th day - minimal amounts -0,02±0,01 - 0,59±0,4 mcg/g.

Sulfaniklamids and chloramfenicols were accumulated mostly in liver. Levomicetin was found at the level of 5,17±1,4 mcg/g in the first day and 0,81±0,4 mcg/g on the 20th day.

Cefotoxin was accumulated mostly in the liver and kidney. On the 1th day its concentration in blood was 2,11±1,1, in liver - 13,51±1,3, kidney - 9,21±0,9, muscles - 5,62±1,1, fat - 6,17±0,8. During
analyse of samples on the day 20 we found its concentration in blood was 0.07±0.03 mcg/g, in liver - 1.29±0.5 mcg/g, kidney - 0.91±0.1 mcg/g, muscles - 0.09±0.01 mcg/g, fat - 1.11±0.6 mcg/g. as we can see from the results level of resides on the 20th day was lower but still use of such poultry products is not safe for the consumer.

Brovafom – new accumulated mostly in kidney and on the 10th day level of its residues was low, use of poultry products is safe for the consumer. On the 20th day residues of this preparation in samples were not detected.

**Conclusion**

On the base of our research we can conclude that poultry products during bacterial infections caused by conditional pathogenic microflora can be dangerous for the consumer nor only like the source of toxicoinfections and toxicosis but also as a source of antibacterial drugs residues which can affect gut microflora, cause allergic reactions and so on. i.

**Reference**

