

OCHRATOXIN A RESIDUES IN HUNTED WILD BOAR (*SUS SCROFA*) FROM TUSCANY

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Ochratoxin A (OTA) is a secondary toxic metabolite synthesized by *Aspergillus* or *Penicillium* species, which can contaminate various crops. The International Agency for Research on Cancer classified OTA as a group 2B possible human carcinogen. OTA is nephrotoxic, mutagenic, teratogenic and immunosuppressive. OTA can also be present in meat of animals where its presence comes as a result of animal feeding with contaminated grain and feed mixtures. The Italian Ministry of Health Circular No 10, dated 9 June 1999, establishes, as a guideline, a maximum value of 1 µg/kg OTA for swine meat and meat products. The significant increase in the wild boar population has resulted in an increased prevalence of wild boar meat, offal and ready-made products in the food industry. The aim of the present study was to determine OTA concentrations in muscle, kidney and liver of wild boar hunted in Tuscany region. A total of twenty wild boars (male n=11 female n=9) were collected in the Province of Pisa from November 2014 to April 2015, animals have been slaughtered and the carcass weight were determined (from a min. of 14.9 kg and a max. of 72.0 kg). Samples of kidney, liver and muscles from each wild boar were collected and analyzed with an enzymatic digestion clean-up and high-pressure liquid chromatography with fluorescence detection method (1). The highest levels of OTA were found in the kidneys of the twenty wild boar analyzed (0.07-2.01 µg/kg, mean 0.58±0.63 µg/kg). The levels found in the liver ranged between 0.08-1.93 µg/kg, (mean 0.53±0.60). The lowest concentrations were found in muscle (0.04-0.77 µg/kg, mean 0.24±0.24). In eight samples of the tissue samples examined in this study (4 kidney and corresponding 4 liver), the levels of OTA were higher than the guideline level (1 µg/kg) established by the Italian Ministry of Health. The present results are in agreement with a previous study conducted in Calabria in wild boars (2). Swine are particularly sensitive to OTA, kidneys showed the highest accumulation of the latter

toxin, followed by liver and muscle tissue, finally the lowest accumulation is represented in adipose tissue. The present results showed the same type of accumulation in wild boar. Traditionally in Tuscany, as in other regions, wild boar meats are used to produce niche products, especially coppa and salami. In agreement with the research of Monaci et al. (3), dried wild boar meat may contribute to overall OTA intake by carry-over effects into processed meats. Monitoring the quality of meat destined for transformation is a priority in order to decrease the possibility of toxin carry-over to humans. The present study confirms that contamination of meat products by OTA represents a potential emerging source of OTA for distinct segments of the Italian population, who are significant consumers of locally-produced wild boar specialties.

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2. Bozzo G., Ceci E., Bonerba E., Di Pinto A., Tantillo G., De Giglio E. 2012. *Toxins (Basel)* 4: 1440-1450.
3. Monaci L., Tantillo G., Palmisano F. 2004. *Analytical and Bioanalytical Chemistry* 378: 1777-1782.