



# 1<sup>st</sup> International Congress of Veterinary Pharmacology & Pharmaceutical Sciences (1<sup>st</sup> ICVPS)

October 4 - 5, 2008 Tehran - Iran

## Reports of zinc phosphide poisoning in sheep in Fars province

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Zinc phosphide is a rodenticide that has been used since the 1930s. Formulation and especially those found in over-the-counter preparations, contain 2 and 5 percent zinc phosphid mixed with wheat, oats. Sometimes in Fars province it is called "Black Wheat". Zinc phosphide rapidly forms phosphin gas in acidic conditions. The exact mechanism of action is not clear, but phosphin has been shown to block cytochrome oxidase and thus, oxidative phosphorylation is inhibited and energy-producing processes in mitochondria is blocked which results in cell death. These reports describe three episodes of zinc phosphide poisoning of sheep in different areas of Fars province. In one episode farmer added zinc phosphide wheat-mixture to oat barn and it accidentally fed to sheep. Clinical signs and mortality was started immediately after feeding. Out of 215 adult sheep, 38 died and 16 showed clinical signs of poisoning. In another episode farmer used this poison for rodent control in a wheat farm. Sheep browsed on the residue of wheat straw. A number of sheep died and some showed clinical signs of toxicity one day after grazing. Out of 350 adult sheep, 62 sheep died and 31 sheep showed clinical signs. In the third episode three sheep's carcasses and eight sick sheep with zinc phosphide poisoning signs were referred to Shiraz Veterinary Teaching Hospital. Clinical signs in three above reports included severe depression, tachypnea, expiratory grunt, salivation, epiphoria, ruminal tympany, ataxia, weakness, recumbancy and struggling. Necropsy finding included incomplete rigor mortis and putrefaction, phosphine gas odor from rumen, observation of black wheat in ruminal contents, hemorrhage and congestion of ruminal, omasal and abomasal walls, Liver and kidney congestion and lung edema and congestion. Treatments were instituted by fluid therapy, antacid (sodium bicarbonate) and laxatives (magnesium sulfate and paraffin) administration for standing animals. The extensive use of poison is a warning issue and it was concluded that history, clinical signs and necropsy findings are necessary for diagnosis.

**Keywords:** Zinc phosphide poisoning, sheep, Fars province

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## Study on the effect of Imatinib on the spermatogenesis and pituitary-gonad hormonal axis in male Wistar rats

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**Introduction:**(pharmacology) Imatinib is a 2-phenylaminopyrimidine derivative that functions as a specific inhibitor number of tyrosine kinase enzymes, Imatinib is designated chemically as 4-[(4-Methyl-1-piperazinyl)methyl]-N-[4-(3-pyridinyl)-2-pyrimidinyl]amino]-phenyl]benzamide metahanesulfonate, Its molecular formula is C<sub>29</sub>H<sub>31</sub>N<sub>7</sub>O, Imatinib mesylate is used in chronic myeloid leukaemia (CML) and gastrointestinal stromal tumors (GISTs) and number of other malignancies; imatinib an related drugs may be useful in treating smallpox also being used in the treatment of certain brain tumors to include high grade glioblastoma. Although developed to inhibit selectively the bcr-abl tyrosine kinase, Imatinib has been subsequently discovered to inhibit potently other tyrosine kinases, such as c-abl, c-kit and platelet derived growth factor receptor (PDGFR), Broadly, side effects such as edema, nausea, rash and musculoskeletal pain are common but mild. **Methods:** Three groups of rats were gavaged with 400, 600, 800 mg/kg imatinib for 30 consecutive days, controls remained intact. On day 7, 14, 30 after the end of treatment, blood serum concentration was measured with RIA method, sperm count of epididymis were taken place after the staining with aqueous eosin Y, also sections of testes which were stained with H&E, were investigated histological. **Results:** Imatinib can be deleterious to spermatogenesis, the sperm count of epididymis decreased in these groups and less number of sperm, was observed in third experimental group. (P < 0.01) the thickness of tunica albuginea increased in third experimental group (p < 0.05); reduced proliferation of type A spermatogonia and induced germ cell apoptosis and the length of the seminiferous cord was reduced, whereas plasma levels of luteinizing hormone and follicle stimulating hormone were significantly increased.

**Keywords:** Imatinib, Spermatogenesis, Testis