

Developmental effects on sulfentrazone exposed ratsVera Lucia Castro¹, Paola Poli², Camila Destefani³, Carlos Diniz³¹Embrapa Environment, JAGUARIUNA, SP, Brazil²Università degli Studi di Parma, PARMA, Italy³University of São Carlos, SÃO CARLOS, Brazil

Knowledge about the potential toxic effects of the herbicide sulfentrazone is still limited. The results of these studies elicited a high level of concern, since the developmental toxicity studies demonstrated embryo/fetal toxicity at treatment levels that were not maternally toxic. In view of these facts, the aim of the present work was to study the effects of sulfentrazone maternal exposure during different phases in the development of rat pups, on early physical and neurobehavioral endpoints essential to their development. For that, the effects of the herbicide sulfentrazone (25 and 50 mg/kg) were examined at two different developmental stages in the rat: during the first 6 days of gestation or prenatal (15-21 days). After parturition, pups were tested in a developmental test battery including measures of growth, maturational milestones and neurobehavioral development. Findings on the pups' physical development indicate significant alterations of the postnatal age at which the developmental milestones opening of the ears and eyes and testes descent were observed. There was a reduced rate of weight gain in pups and their mothers treated during gestational period at the highest dose tested. The study of the functional state of the rat pup nervous systems at different stages of postnatal development revealed some neurodevelopmental delays in righting reflex, negative geotaxis, grip response and motor coordination - locomotion and rearing (21 to 90 days of life) in the treated groups. Taken together, findings of this study emphasize that, as a result of sulfentrazone maternal exposure, may occur some neuromuscular and behavioral deficits in nursing pups.