Human Health Risk Assessment of the Pesticide Simplex with the Active Substances Aminopyralid and Fluroxypyr

Line Emilie Sverdrup a*, Christine Bjørge b, Ole Martin Eklo c, Merete Grung d, Torsten Källqvist d, Ingeborg Klingen c, Marit Låg e, Edgar Rivedal f, Erik Ropstad g and Steinar Øvrebø h

a Norwegian Scientific Committee for Food Safety (VKM), Det Norske Veritas, Norway.
b Norwegian Scientific Committee for Food Safety (VKM), Norwegian Environment Agency, Norway.
c Norwegian Scientific Committee for Food Safety (VKM), Norwegian Institute of Bioeconomy Research, Norway.
d University of Oslo / Norwegian Scientific Committee for Food Safety (VKM), Norwegian Institute for Water Research, Norway.
e Norwegian Scientific Committee for Food Safety (VKM), Norwegian Institute of Public Health (FHI), Norway.
f Norwegian Scientific Committee for Food Safety (VKM), Oslo University Hospital, Norway.
g Norwegian Scientific Committee for Food Safety (VKM), Norwegian University of Life Sciences, Norway.
h Norwegian Scientific Committee for Food Safety (VKM), National Institute of Occupational Health, Norway.

Authors’ contributions

This work was carried out in collaboration among all authors. The opinion has been assessed and approved by the Panel on Pesticides of VKM. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/EJNFS/2022/v14i430488

Received 10 March 2022
Accepted 13 May 2022
Published 03 June 2022

ABSTRACT

Simplex is a new herbicide in Norway containing the active substances aminopyralid and fluroxypyr. Aminopyralid is a new active substance in Norway, but fluroxypyr is found in several authorized products. The application concerns use in established grassland for forage, established ley and pasture and in grass at the first year of sowing. The Norwegian Scientific Committee for Food Safety (VKM) has on a request from the Norwegian Food Safety Authority performed a risk assessment on human health of the active substance and the product. The risk assessment of the product was approved at a meeting May 11 2010 by VKMs Scientific Panel on Pesticides (Panel 2). VKM’s Panel 2 concludes as following:
Both Simplex and the active substance aminopyralid are characterized as extremely irritating to the eye based on persistent irritation to the eyes of rabbits. The product Simplex is also found irritating to the rabbit skin.

Aminopyralid has low acute toxicity and is not shown to have genotoxic potential, or to be teratogenic or toxic to the reproduction in animals. There may however be a carcinogenic effect of aminopyralid based on an increased number of uterine sarcomas in mice. The main target organs for sub-chronic and chronic toxicity were the caecum (rats), the stomach (dogs, inflammation) and the liver (dogs, hyperthropy). No adverse effects for chronic toxicity were seen in mice. Rabbit was the most sensitive species for toxicity and the no observed effect levels (NOAELs) derived from studies in this species serve as base for calculations of values for acceptable daily intake (ADI) and acceptable operator exposure level (AOEL).

The estimated risk for operator is assessed as minimal both by use of boom spraying (46% of AOEL) and knapsack sprayers (81% of AOEL).

However, as a result of the hazard classification, a faceshield and gloves are necessary personal protective equipment (PPE) to be worn during mixing and loading operations, due to the risk of serious damage to the eyes and skin irritation.

Keywords: VKM; assessment; Norwegian Scientific Committee for Food Safety; fluroxypyr.

Available: https://vkm.no/download/18.2994e95b15cc545071682831/1500469493533/6334846a5a.pdf


NOTE:

This work was carried out in collaboration between all authors. The opinion has been assessed and approved by the Panel on Pesticides of VKM. All authors read and approved the final manuscript.

Competence of VKM experts: Persons working for VKM, either as appointed members of the Committee or as external experts, do this by virtue of their scientific expertise, not as representatives for their employers or third party interests. The Civil Services Act instructions on legal competence apply for all work prepared by VKM.


COMPETING INTERESTS

Authors have declared that no competing interests exist.