

BANNING OF TERBUFOS IN SOUTH AFRICA



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health

Department:
Health
REPUBLIC OF SOUTH AFRICA



ADVISORY FROM THE MINISTERIAL ADVISORY COMMITTEE ON FOOD BORNE ILLNESS ON THE BANNING OF TERBUFOS

Problem Statement and Task to Committee: Should the pesticide Terbufos be banned in South Africa?

1. Background

In October 2024, 6 children died from consumption of Terbufos that led to acute organophosphate poisoning. It is still unclear how the children were exposed to Terbufos although it was speculated that they consumed food contaminated with Terbufos granules purchased from a local spaza shop. However, although residues of Terbufos were found on the outside and inside of one packet of crisps, the exact pathway of contamination is at present unclear, nor whether it was the spaza shop that was the source of contamination. However, the incident exposed the fact that Terbufos granules are widely used in urban settings where residents contend with rat and pest infestations as a result of inadequate garbage removal at municipal level. Residents turn to the use of agricultural pesticides which are not registered for domestic or community pest control purposes. These pesticides are illegally sold in informal street markets and from spaza shops in the poorest communities. Because Terbufos was found to be the cause of the death of the 6 children in October 2024, the MAC was asked to provide an opinion as to whether Terbufos should be banned.

2. Evidence review.

Terbufos is an organophosphate pesticide categorised in the most toxic pesticide class (WHO 1a) by the World Health Organisation. It is not registered for use in the European Union (EU) and is a restricted use pesticide in the United States of America (USA). Most African countries do not permit its use. The acute toxicity of Terbufos is similar to, or higher than, other organophosphate and carbamate pesticides already banned/withdrawn in South Africa.

In the course of the MAC's examination of the data on Terbufos poisoning it became clear that (a) that there is a high mortality from Terbufos exposure – at least 375 people died in 2023 and 2024 (or about one person every second day in the two year period) following exposure to this pesticide as reported by the National Forensic Chemistry laboratories; (b) a significant number of cases, especially children, die before reaching a health facility following Terbufos poisoning; (c) this epidemic of fatal poisoning has been largely hidden from the public eye; (d) the fatal poisonings involving Terbufos resulting in the death of 6 Naledi children are likely to be only the tip of a serious pesticide poisoning iceberg; (e) The mortality from Terbufos is occurring against the background of a wider pattern of pesticide poisoning with data based on routine cholinesterase testing at NHLS laboratories suggesting that at least 1400 patients are likely to have suffered severe poisoning from cholinergic pesticide exposure across South Africa per annum for the past 5 years, while data from the Notifiable Medical Conditions system suggest that 453 cases of pesticide poisoning have been reported amongst children under the age of 12 in the past year. Data from Chris Hani Baragwanath Hospital suggest that children poisoned with pesticides are 10 times more likely than children poisoned by other agents to require ICU admission and 14 times more likely to die in hospital. These data suggest that poisoning with pesticides is an endemic problem, which was brought to the public's attention by the tragic deaths of the Naledi children in October 2024.

The National Policy on Pest Management, issued by the DALRRD in 2010, earmarked WHO Class 1a and 1b highly toxic pesticides for strong action, including banning and phase out. This is consistent with a global effort led by the World Health Organisation (WHO) and the Food and Agricultural Organisation (FAO) to phase out the most toxic pesticides, known as High Hazardous Pesticides (HHPs). However, DALRRD did not issue any regulations on this matter until August 2023 and when the regulations emerged, they did not ban Terbufos but rather made it a restricted pesticide, legally registered, which should only be sold to and used by a trained and legally competent person. However, even though these legislative measures were in place since August 2023, they have not been implemented, seemingly because of the need for the agricultural sector industry to have more time to adapt to the regulations. It was during this period that the 6 children from Naledi died from Terbufos poisoning.

Notably, there are examples of the banning of Highly Hazardous Pesticides being effective in reducing mortality, such as in Sri Lanka, without adverse impacts on agricultural production. South Africa banned a similar Class 1a pesticide in 2016, Aldicarb, and deaths due to aldicarb in the Forensic Pathology data have almost disappeared, indicating the effectiveness of bans. The WHO also provides technical support to assist farmers to move away from Terbufos and other HHPs.

3. Recommendations

- 3.1 The MAC recommends that Terbufos be banned for use immediately (i.e. the decision should be taken without delay).
- 3.2 The ban should be accompanied by a range of other measures including effective enforcement both whilst the ban is being implemented and to continue thereafter as well as safe and timely disposal of stockpiles.
- 3.3 Urgent identification of available safer alternatives to terbufos under local conditions and implementing an effective awareness campaign to promote a sustainable transition to their adoption and use.

These recommendations are made recognising that a wide range of other complementary measures will be needed in addition to banning Terbufos and future MAC recommendations will address these including improvement in information systems to identify and track the harmful effects of pesticides on human health, public information campaigns and strengthened clinical services for the diagnosis, treatment and rehabilitation of those impacted by exposure to pesticides, amongst other measures.

4. Rationale for the recommendations

- 4.1 Terbufos is without doubt one of the most toxic pesticides registered for use in South Africa.
- 4.2 Based on Forensic Chemistry Laboratory data review over the past few years, Terbufos has been confirmed as responsible for at least 175 deaths per annum in South Africa. Approximately 35% were children. The Poisons Helpline described 243 patients with symptomatic organophosphate and carbamate poisoning in 2024 of which 22% (54 cases) were children 12 years or younger. Similarly, the cases reviewed at the Pharmacology service laboratory at Universitas Academic Hospital over a five year period found that a similar proportion (22%) of the 65 cases confirmed with fatal Terbufos poisoning were children. Furthermore, NICD reports that 453 cases of pesticide poisoning involving children were notified in the past year. Notification data do not currently include the causative agent.
- 4.3 The patterns of poisoning and mortality findings suggest that pesticide poisoning and specifically Terbufos poisoning is an endemic problem underlying the deaths of the 6 children in Soweto in October 2024.
- 4.4 Existing measures to control access to Terbufos have failed in preventing poisonings and deaths. Despite the introduction of a restricted use category for Terbufos in August 2023, we have not seen any product stewardship measures reducing the accessibility to Terbufos for unintended uses. Months after the public outcry and after inspections sought to root out illegal sales, it was reported that Terbufos was still available in informal markets in South Africa.
- 4.5 South Africa has, under its international commitments, agreed to phase out the most Highly Hazardous Pesticides (HHPs) and DALRRD recognised the weakness in the existing regulatory framework for registering pesticides more than a decade ago in its Policy Paper

which committed to measures to prevent harms from pesticide availability. These measures included phase out and bans.

4.6 The WHO and FAO provide support to countries to find alternatives to HHPs.

4.7 Experience from Sri Lanka has shown that selective banning of the most toxic pesticides can be effective in reducing population mortality without adverse impacts on agricultural production. Efforts to introduce regulatory restrictions of conditions of sale of these HHPs were not effective as has been seen in South Africa where even after the deaths of the Naledi children, Terbufos was still reported as accessible in informal street markets in South Africa.

4.8 South Africa previously banned another Class 1a pesticide responsible for child poisoning, Aldicarb, and Aldicarb deaths have been almost eliminated in South Africa.

4.9 We have constitutional obligations towards ensuring the right to an environment that is not harmful to health and to prioritising the best interests of the child in all matters affecting the child.

4.10 Continuing to allow the registration of Terbufos will likely extend the epidemic of mortality due to this pesticide. Relying on anticipated improvements in product stewardship along the distribution chain to prevent access to Terbufos is too risky to allow, due to its extreme toxicity, and given the extent to which product stewardship has failed to date.

Thank you for consideration of this recommendation.

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