

## **Almost half of Tanzanian cotton farmers interviewed report symptoms of acute pesticide poisoning in new study (1)**

Of the 1,074 cotton farmers and farm workers surveyed, 48% reported suffering adverse health effects within 24 hours of pesticide exposure over the previous year. Just 6% of these farmers had sought medical treatment in a formal healthcare setting, suggesting that estimates of pesticide poisoning based on medical records underestimate the problem.

Professor Deodatus Kakoko, Dean of the School of Public Health and Social Sciences at Muhimbili University of Health and Allied Sciences (MUHAS) in Tanzania said, *"This robust study reveals a significant problem of pesticide poisoning in Tanzania. It is a very welcome addition to the body of scientific evidence on this neglected topic. More routine surveillance is needed to detect such problems in future."*

Over 80% of incidents were associated with exposure to four pesticides: profenofos, lambda-cyhalothrin and mixtures of chlorpyrifos and cypermethrin.

Profenofos and chlorpyrifos are both organophosphate insecticides that have adverse effects on the nervous system. Each of them is already banned in at least 39 countries. The more severe health effects reported in the current study include extreme agitation, loss of consciousness and seizures.

Chlorpyrifos is currently under consideration for listing under both the Stockholm and Rotterdam conventions due to its persistence and its harmful effects on health and the environment. **(2)** Children are particularly vulnerable to its effects on brain development.

Lambda cyhalothrin has different effects on the body, with skin and eye irritation and respiratory effects being widely reported. It is classified as 'fatal if inhaled'. **(3)**

Raphael John Mwezi, Head of the Toxicology Unit at Tanzania Plant Health and Pesticides Authority said, *"The large-scale study provides important new evidence of the impact of hazardous pesticide use on the health of farmers and workers in Tanzania. The large numbers of farmers reporting pesticide poisoning is alarming and warrants swift action, particularly in relation to the few pesticides that were associated with most of the incidents."*

Professor Andrea Rother, Head of Environmental Health Division and Associate Professor in the School of Public Health and Family Medicine, University of Cape Town said, *"Promoting personal protective equipment (PPE) is widely seen as sufficient to protect people from pesticide exposure. The study shows that this is not the case. Although training on PPE use can play a limited role in reducing pesticide exposure, it does not address gendered and climatic conditions in Africa, and access to inappropriate PPE. Thus, as the study highlights, PPE use does not significantly reduce Unintentional Acute Pesticide Poisoning (UAPP)."*

Solutions already exist in Tanzania that could protect farmers' health and profits. For example, the food spray method **(4)** which attracts predatory insects into the cotton crop foliage, and biopesticides and botanical pesticides that have been shown to be effective against key cotton pests. Drawing on evidence from the growing organic cotton sector in Tanzania, they highlight the potential for cotton cultivation free of Highly Hazardous Pesticides (HHPs).

Over half-a-million farming households in Tanzania rely on cotton as their main source of income. Cotton is an important export crop for the country and there are ambitious plans to scale up production. **(5)**

Dr Keith Tyrell, Head of Global Strategy at The University of Edinburgh's Centre for Pesticide Suicide Prevention (and co-author on the paper) said, *"Like many cotton-producing countries, the Government of Tanzania is closely involved in the cotton sector. The Tanzania Cotton Board, which is a statutory body, procures and distributes pesticides to farmers at a subsidised price. It is hoped that the study will provide a basis for the adoption of safer and more sustainable methods of cotton production."*

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#### **NOTES TO EDITOR:**

- (1) Kapeleka *et al.* (2025) Assessment of Unintentional Acute Pesticide Poisoning (UAPP) Amongst Cotton Farmers in Tanzania, *Toxics*, 13(4)  
<https://www.mdpi.com/2305-6304/13/4/300>  
<https://doi.org/10.3390/toxics13040300>
- (2) Chemicals proposed for listing under the Stockholm Convention  
<https://pops.int/TheConvention/ThePOPs/ChemicalsProposedforListing/tabid/2510/Default.aspx>
- (3) Naveen *et al.* (2023) Lethal neurotoxicity in lambda-cyhalothrin poisoning, *The American Journal of Forensic Medicine and Pathology*, 44(1).  
[https://journals.lww.com/amjforensicmedicine/abstract/2023/03000/lethal\\_neurotoxicity\\_in\\_lambda\\_cyhalothrin.9.aspx](https://journals.lww.com/amjforensicmedicine/abstract/2023/03000/lethal_neurotoxicity_in_lambda_cyhalothrin.9.aspx)  
DOI: 10.1097/PAF.0000000000000789
- (4) PAN UK's Food Spray Manual: <https://www.pan-uk.org/food-spray>

(5) Tanzania's Cotton Revolution: Doubling Production for Economic Growth

<https://www.digest.tz/tanzanias-cotton-revolution-doubling-production-for-economic-growth/>