

Frequently asked questions about Paraquat



What is Paraquat?

- Paraquat is a toxic chemical that is widely used as an herbicide (plant killer), especially for weed control.
- In the United States, it is available as a liquid in various strengths. It is listed as a Restricted Use Pesticide (RUP) by the US Environmental Protection Agency. This means that it can be used only by licensed applicators.
- The form that is marketed in the United States as a highly poisonous herbicide contains a blue dye to keep it from being mistaken for beverages such as coffee. It also has an offensive odor to serve as a warning and an additive that induces vomiting if someone has drunk it. Paraquat from outside the United States may not have these safeguards added.

What Products (trade names) contain Paraquat in Nigeria?

They are as follows: Gramoxone Super, Weed-off, Dragon, Paraforce, Dizmazone-20%, Weed Crusher, Paraquat Liquid. Other are: Bret P-20 Liquid, Miazone, Premium paraquat. Ravage, Uniquat, Mxiquat, Paracot, Para-One, Paratex, Slasher, Scud, Weedex 200 Sl, Baraquat Liquid, Chemquat, Glopara-Liquid, Grass Cutter 20%, Philozone, Paracom Eraser LQ, Paragliquid, Reliquat, Uniquat Liquid

How can one be exposed to Paraquat?

- The most likely route of exposure that would lead to poisoning is ingestion (swallowing).
- Paraquat can be mixed easily with food, water, or other beverages. If the form that is used does not contain the safeguarding additives (dye, odor, and vomiting agent), people might not know that food, water, or other beverages are contaminated. Eating or drinking paraquat-contaminated food or beverages can poison people.
- Poisoning is also possible after exposure to the skin. It is more likely to occur if the exposure lasts for a long time, involves a concentrated version of the herbicide, or occurs through skin that is already damaged (skin that has sores, cuts, or a severe rash).

- If it is inhaled, Paraquat could lead to lung damage. In the past, some marijuana in the United States has been found to contain Paraquat.
- Licensed applicators are the people at most risk of exposure.

How does Paraquat affect human health/environment?

- The extent of poisoning depends on the amount, route, and duration of exposure and the person's health condition at the time of exposure.
- Paraquat causes direct damage when it comes into contact with the lining of the mouth, stomach, or intestines.
- After it has entered the body, Paraquat is distributed to all areas and causes toxic chemical reactions to occur throughout many parts of the body, especially the lungs, liver, and kidneys.
- Cells in the lungs selectively accumulate Paraquat, most likely by breathing.

What are the immediate signs and symptoms of Paraquat exposure?

After anyone ingests a large amount of Paraquat, the person is immediately likely to have pain and swelling of the mouth and throat. The next signs of illness are gastrointestinal (digestive tract) symptoms, such as nausea, vomiting, abdominal pain, and diarrhea (which may become bloody).

Severe gastrointestinal symptoms may result in dehydration (not enough fluids in the body), electrolyte abnormalities (not enough sodium and potassium in the body), and low blood pressure.

In general, ingestion may lead to the development of the following adverse health effects or symptoms from within a few hours to several weeks afterwards (depending on the amount or quantity): acute kidney failure, confusion, coma, fast heart rate, injury to the heart, heart failure, liver failure, lung scarring (evolves more quickly than when small to medium amounts have been ingested), muscle weakness, seizures, pulmonary edema (fluid in the lungs), respiratory (breathing) failure, possibly leading to death.

What are the long-term health effects?

If a person survives the toxic effects of Paraquat poisoning, long-term damage to vital human organs may occur. This can be lung (scarring) kidney failure, heart failure, and esophageal strictures may

result (scarring of the throat that makes it difficult for a person to swallow). There is also an increased risk of developing Parkinson's disease later in life. People with large ingestion of Paraquat are not likely to survive.

How is exposure treated in the hospital?

Initial therapy consists of removing the poison from the body (decontamination) and preventing further absorption for oral exposure by using activated charcoal or Fuller's earth. Nasogastric suction may be considered for ingestions that present within 1 hour. Supportive care measures such as intravenous fluids (fluids given through a needle inserted directly into a

vein), medications to help with breathing and to raise low blood pressure, a ventilator to support breathing, and possibly dialysis for kidney failure should be provided. Administration of excessive oxygen should be avoided because it may worsen toxicity. No proven antidote or cure exists for Paraquat poisoning.

Which countries have banned or de-registered paraquat?

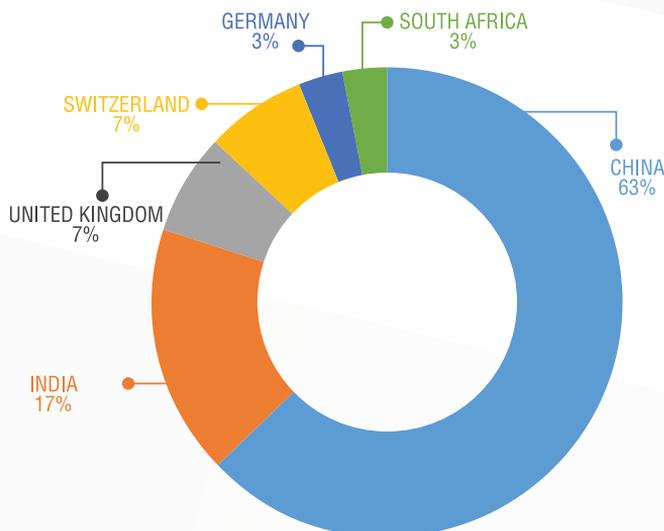
Paraquat has been banned by the European Union and America; by many European countries: Austria, Belgium, Denmark, Finland, France, Norway, Slovenia, Sweden, and Switzerland; by African countries: Côte d'Ivoire and Zambia, and by many other countries

across the world: Belize, Cambodia, the Caribbean, Chile, Columbia, Costa Rica, Dominican Republic, Indonesia, Korea, Kuwait, New Zealand, Malaysia, the Philippines South Korea, Syria, and the United Arab Emirates.

Which countries are exporting paraquat to Nigeria?

China accounts for about 63% of the total amount exported to Nigeria. However, China is now prepared to prohibit or ban use and sales of any Paraquat formulation in China

by September 2020 (<http://www.cnchemicals.com/Press/89866->). Other exporting countries include Germany, India, South Africa, Switzerland, and the United Kingdom,



What are the current practices in Nigeria?

The precautions listed in the document of the US Center for Disease Control (USCDC) concerning exposure and remedial actions are more difficult to follow in many developing countries than in the developed world.

Nigerian farmers and sellers of agro-inputs have the following disadvantages:

- » There is minimal to no training of applicators
- » Anyone can buy Paraquat from street vendors.
- » There are no requirements for safety additives to be included in commercial formulations.
- » There are no requirements for handlers and applicators to wear PPE.
- » There are no standards for the proper maintenance of spray equipment, and anyone, including women and children, can apply Paraquat.
- » Adequate protective clothing is often not used.
- » Knapsack sprayers can be leaking or poorly maintained.
- » Provision for washing and removing Paraquat from the skin are inadequate on-farm and medical facilities are not readily available.
- » Farmers make repeated applications, increasing their exposure.
- » Improper disposal of excess spray solution.
- » Used herbicide containers are carelessly discarded and pesticides are insecurely stored, often in unlocked facilities, that makes safe use of Paraquat extremely difficult.

What are the alternatives to paraquat?

Glyphosate, Glufosinate-ammonium, Diphenyl ether, Aryloxyphenoxy-propionate and Cyclohexanedione ([WSSA Herbicide Handbook, 2015](#)).

The Coalition Against Paraquat (CAP) is a group of eminent professionals from diverse disciplines that are promoting the use of safe and environment-friendly herbicides in Nigeria.

For more information, please contact: Prof. M.G.M Kolo, mgmkolo@gmail.com, Friday Ekeleme, f.ekeleme@cgiar.org; and Godwin Atser, g.atser@cgiar.org