# PARAQUAT TOXICITY


## Dr. Mucheleng’anga A. Luchenga.

Forensic Pathology (University of Toronto), MMED Anatomical Pathology(UNZA), BScHB (UNZA), MBcHB (UNZA).

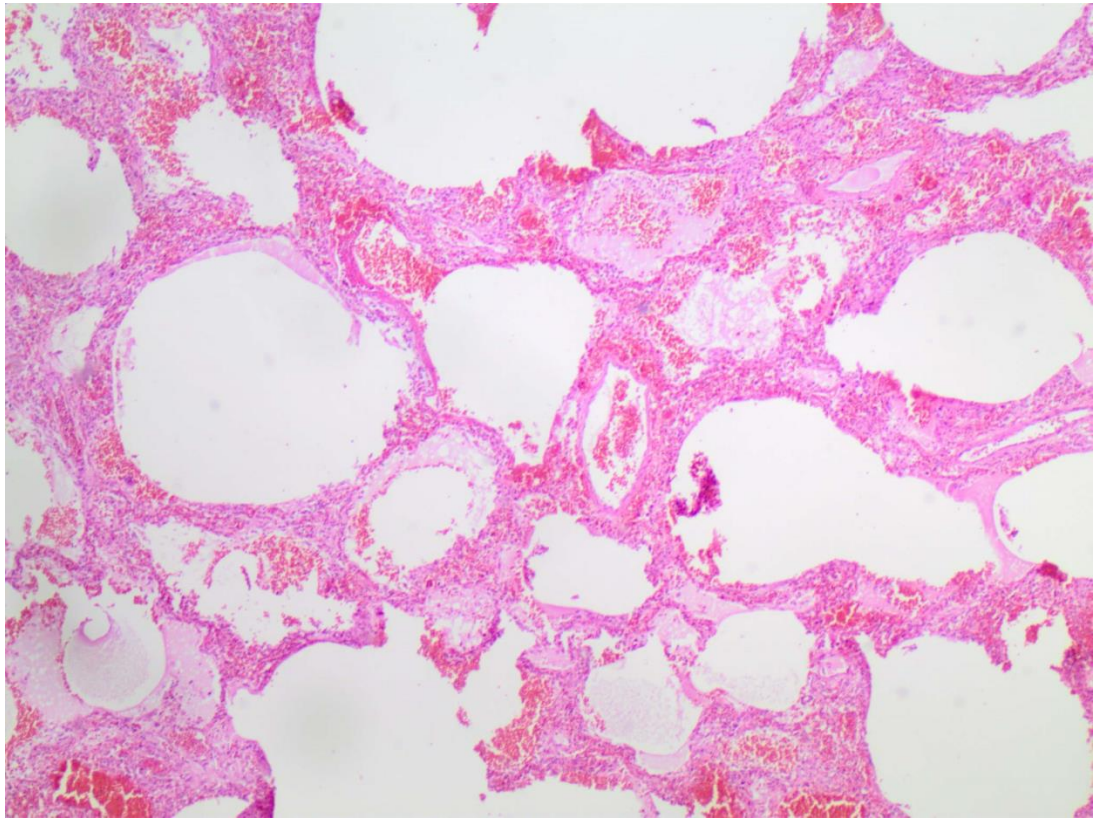
## Dr Himwaze M Cordelia

Forensic Pathology (University of Toronto), MMED Anatomical Pathology(UNZA), MD (Ryzan).

# Case History

- A 19-year-old-female died in hospital 14 days after ingesting a paraquat containing herbicide to end her life at farm after a marital dispute.
- On the fifth day of admission, a nasopharyngeal swab for PCR test was positive for Sars Cov 2.
- Toxicology testing confirmed paraquat toxicity.

- The lungs were heavy (right 800 g; left 840 g respectively), large and stiff, maintaining their shape when eviscerated.
- The cut surface revealed edema and patchy haemorrhage.



- Microscopy revealed emphysematous changes and parenchymal hemorrhage in the lung tissue.
- The cause of death was paraquat toxicity.
- The manner of death was suicide

- Paraquat is a herbicide commonly used in farms in Zambia.
- Toxicity occurs almost exclusively through ingestion. The paraquat reacts with tissue elements to produce peroxides, including hydrogen peroxide, which is responsible for the damage.
- When paraquat reaches the distal air spaces, diffuse pulmonary edema and haemorrhages occur, followed by stimulation of the alveolar lining cells.
- In the initial stages, there is damage to the pneumocytes with vacuolation, desquamation, necrosis, and hyaline membrane formation.
- If survival continues, the alveoli begin to fibrose, with reticulin and collagen being laid down to form a rigid, stiff lung.