Crop protection:: Pesticides::Antidodes

FIRST AID MEASURES AND ANTIDOTES RECOMMENDED FOR REGISTERED PESTICIDES

INORGANIC COPPER COMPOUNDS

S.No	Name of the pesticide	Symptoms of poisoning	First aid measures	Treatment/antidote
1. 2. 3. 4.	Copper Hydroxide Copper Oxychloride Copper Sulphate Cuprous oxide	Nausea, vomiting, diarrhoea with blood, colicky abdominal poin and headache are the early features of poisoning. Dehydration can lead to shock. May cause oedema of lids, conjunctivitis and corneal ulceration. 1. Liver enlargement and jaundice 2. Haemolysis & Methemoglobinemia 3. Albuminuria, haemoglobinuria and sometimes acute renal failure. Severe poisoning causes coma, convulsions and death.	Remove the person from the contaminated environment. Give water or milk as soon as possible to dilute the toxicant and mitigate corrosive action on the mouth, esophagus, and gut. Unless vomiting has been vigorous and effective, empty the stomach by intubation, aspiration, and lavage, taking all precautions to protect the respiratory tract from aspirated stomach contents. Activated charcoal included in the lavage fluid may be of some value against the organometallic compounds but is probably less effective against the inorganic copper compounds. Caution: Gastric incubation may pose a serious risk of esophageal perforation if corrosive action has been severe. In this event, it may be best not to attempt incubation.	1. If indications of systemic illness appear, administer intravenous fluids containing glucose and electrolytes. Monitor fluid balance and correct blood electrolyte concentrations as needed. If shock develops, give blood transfusions and vasopressor amines, as required. 2. Monitor plasma for evidence of hemolysis (free hemoglobin) and the red cells for methemoglobin. If hemolysis occurs, alkalinize the urine to about pH 7.5 by adding sodium bicarbonate (44-88 mEq per litre) to the intravenous infusion fluid. Also mannitol diuresis may be considered. Unless methemoglobinemia is severe (30-40%), it is probably not advisable to administer methylene blue. 3. Severe pain may require the administration of morphine. 4. The value of chelating agents in copper poisoning has not been established. BAL appears to show some promise in accelerating copper excretion and alleviating illness. If the severity of poisoning appears to warrant its use. The dosages are: **Severe poisoning**: – 1st day – 3.0 mg/kg (4 hourly); 2nd day – 3.0 mg/kg (4 hourly); 3rd day – 3.0 mg/kg (6 hourly); and following 10 days or until recovery – 3.0 mg/kg (12 hourly). **Mild poisoning**: - 1st day – 2.5 mg/kg (6 hourly); 2nd day – 2.5 mg/kg (6 hourly); 3rd day – 2.5 mg/kg (12 hourly) and following 10 days or until recovery – 2.5 mg/kg daily. 5. D-penicillamine can subsequently be used – **Adults & Children over 12 years**: 0.5 g every 6 hours, given 30-60 min before meals and at bedtime for about 5 days;**Children under 12 years** – 0.1 g/kg body weight, not exceeding 1.0 g per day, divided into 4 doses, given 30-60 minutes before meals and at bedtime for about 5 days. 6. **Caution: Adverse reactions to short term therapy are rare. Persons allergic to penicillin may suffer allergic reactions to**

				D-penicillamine; they should be treated with BAL only.