

Bean rust

Uromyces appendiculatus; local name: Kutu ya maharagwe (Swahili)

	Prevention	Monitoring	Direct Control	Direct Control	Restrictions
	<ul style="list-style-type: none"> Practice 2 year crop rotation with non-leguminous plants such as tomatoes, cabbages and kales Remove and burn old crop residues as the disease can live for one year on the material left in the field Plant resistant varieties like GLP-X 1127 new mwezi moja, New rose coco and Kutules (J12) French beans. 	<ul style="list-style-type: none"> Look out for small orange to yellow halo-like powdery pustules on the upper side and orange to red circular pustules on the lower leaf surface. 	<ul style="list-style-type: none"> Pick affected leaves, transport away from the field in a plastic bag and destroy by burning as soon as possible to prevent spores from spreading 	<ul style="list-style-type: none"> Hexaconazole (e.g. Cotaf 5% EC) at 75-100ml/20L of water FRAC mode of action 3 	<ul style="list-style-type: none"> WHO III (Slightly hazardous) PHI 14 days
	<ul style="list-style-type: none"> Use clean bean seeds originating from non-diseased plants or from certified seeds dealers Plough deep to about 45 cm to turn residues into the soil. This encourages rotting of the plant remains and reduces fungal inoculum to the next bean season 	<ul style="list-style-type: none"> Also look out for pustules on the petioles, pods and the stem. 	<ul style="list-style-type: none"> Work on the healthy part of the field first before the infected area 	<ul style="list-style-type: none"> Chlorothalonil (e.g. Daconil) at 72ml/20L, Twigathalonil 720 SC at 40ml/20L of water FRAC mode of action 3 	<ul style="list-style-type: none"> WHO class U (Unlikely to present acute hazard in normal use) Toxic to aquatic organisms Do not spray near surface water or empty into water drains PHI 7 days
	<ul style="list-style-type: none"> Avoid planting new bean crop next to an old bean field Remove weeds and alternate host plants e.g. <i>Oxalis spp</i> from bean fields. Avoid relay planting of bean crop Avoid walking through the field during wet weather to prevent disease spread from one plant to another 	<ul style="list-style-type: none"> Consider applying direct control when brown pustules are observed on the leaves of 4-5 plants 		<ul style="list-style-type: none"> Mancozeb (eg Biothane WP) Mix 5g of Biothane 80WP in 20litres of water FRAC mode of action 3 	<ul style="list-style-type: none"> WHO class U (Unlikely to present acute hazard in normal use) Toxic to aquatic organisms Do not spray near surface water or empty into water drains PHI 14 days
				<ul style="list-style-type: none"> When using a pesticide always wear protective clothing. Follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains WHO class II pesticides might not be allowed in local IPM schemes Always consult recent list of registered pesticides (PCPB) 	

Kenya

CREATED: July 2013

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