



KALRO/CHP Factsheet No. 72:1

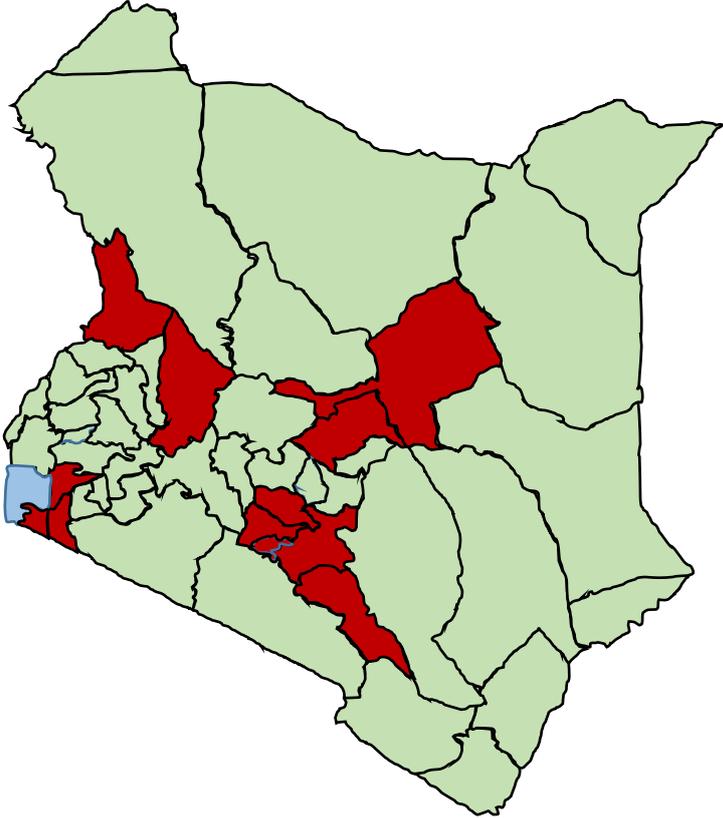


## KALRO E-mimea Plant Clinic

### Black Spot of Papaya (*Asperisporium caricae*)

			
Healthy papaya fruit	Healthy papaya leaves	Papaya leaf infected by black spot disease	Papaya fruit infected by black spot disease
			
Healthy papaya fruit	Healthy papaya tree		Infected papaya fruit in Nairobi County
<b>Disease Name</b>	Black spot disease of Papaya		
<b>Description</b>	<ul style="list-style-type: none"> <li>The black spot pathogen is hyper parasitized by another fungus (<i>Cephalosporium</i> sp.) showing the white fungal growth</li> <li>Black spot disease of papaya is caused by a fungus called <i>Asperisporium caricae</i>. Plant parts affected include leaves, fruit and stem. The disease lowers the quality of the fruits in the market. However, the damage only covers the surface of the fruit although it also causes a bitter taste in the fruit.</li> </ul>		
<b>Disease Pest Category</b>	Continuous		
<b>Diagnosis/Identification</b>	<b>Symptoms</b> <ul style="list-style-type: none"> <li>Small, black spots occur on the underside of the leaf</li> <li>The spots are sunken yellow on the upper leaf surface</li> <li>Black spots eventually develop on the fruit surface. Tissues beneath the</li> </ul>		

	<p>spots may become corky but the fruits do not rot</p> <ul style="list-style-type: none"> <li>• The crop may be affected at any stage of growth</li> <li>• The black spots may be hyperparasitised by other fungi e.g. <i>Cephalosporium</i> sp. or <i>Verticillium</i> sp. producing a whitish growth around affected spots</li> <li>• The disease is more intense on lower leaves</li> <li>• Leafspots/lesions may cover large areas, cause yellowing and premature leaf fall</li> </ul>
<b>Conditions prevailing that contribute to success</b>	<ul style="list-style-type: none"> <li>• Warm humid conditions favor disease spread due to rapid production of fungal spores</li> <li>• The disease is spread by air and may also be spread through splash or during overhead irrigation</li> <li>• Infected plant residues in the field serve as a source of future infections</li> </ul>
<b>Conditions prevailing that contribute to failure</b>	<ul style="list-style-type: none"> <li>• Field sanitation minimizes the source of inoculum</li> <li>• There is reduced spore production during dry weather hence reduced disease spread</li> </ul>
<b>Control Strategy</b>	<p><b>The following management options are recommended:</b></p> <ol style="list-style-type: none"> <li>1. Practice field sanitation by removing and destroying (e.g. by burning) severely infected plant parts and plant debris to reduce disease inoculum on the farm</li> <li>2. Ensure crop vigor and good health through fertilizer and manure application</li> <li>3. Keep the orchard free of weeds to minimize alternative hosts to the pathogen</li> <li>4. To control other opportunistic fungi that cause rotting of papaya use <b>TRICHOTECH</b> (<i>Trichoderma asperellum</i> an antagonistic fungi) from <b>DUDUTECH</b> at 125g/ha</li> <li>5. Spray affected plants with a protective fungicide such as Mancozeb or a copper based fungicide (such as Copper Oxychloride, Copper Sulphate or Copper Hydroxide) according to manufacturer's recommended rates. Ensure proper coverage of the plant during spraying.</li> </ol> <p><b>Note:</b> <i>Agro-chemicals should be used in consultation with professional practitioners and considering existing cautionary/safety measures, particularly the manufacturer's instructions.</i></p>
<b>Mode of spread</b>	<p>The disease airborne and easily transmitted by wind</p> <p>The disease is spread through rain droplets</p>
<b>Mandate Centres</b>	<p>KALRO-Kabete (Food Crops Research Institute); KALRO-Thika (Horticulture Research Institute), KALRO-Kitale (Food Crops Research Institute)</p>
<b>Reference Links – book, journal paper, magazine, brochure, bulletin, fact sheet, web etc</b>	<p>(<a href="http://www.plantwise.org/KnowledgeBank/CountryHome.aspx">http://www.plantwise.org/KnowledgeBank/CountryHome.aspx</a>)</p> <p>KALRO E-mimi website</p>

<p><b>Geographic Coverage</b></p> <p>The disease has been reported on the red highlighted counties but this is expanding rapidly. Country-wide survey is now necessary to confirm distribution of this disease.</p> <p><b>Counties</b></p> <p>Nairobi, Kiambu, Machakos, Makueni, Muranga, Meru, Isiolo, West Pokot, Homabay, Migori</p>	
<p><b>Expert (s) Name</b></p>	<p>Dr. Ruth Amata, Dr. Lusike Wasilwa and Miriam Otipa</p>
<p><b>ALERT</b></p>	<p>We request any person who notices damages similar to images above to send us a photo of this through email. We shall confirm and guide on area-specific control programs. Send us even if you are within areas we are saying the disease has been recorded there.</p>
<p><b>Expert Contact Details</b></p> 	<p><a href="mailto:Ruth.Amata@kalro.org">Ruth.Amata@kalro.org</a>  <a href="mailto:Lusike.Wasilwa@kalro.org">Lusike.Wasilwa@kalro.org</a>  otipamj@gmail.com</p>
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