











## KARI E-mimea Plant Clinic



KARI/Mimea Factsheet No.17/2014

Disease: **Mango sooty mold (*Meliola mangiferae*)**Crop: **Mango**

			
Clean leaves and fruits	Infected leaves	Infected leaves and flowers	Infected mango stem and leaves
			
Clean mango fruits	Sooty mould on flower stalk	Rotting fruit due to mold	Infected mango fruits

Photos from <http://www.google.com>

Disease name	Mango sooty mold ( <i>Meliola mangiferae</i> )
Description	Sooty mold results from interactions among sap-feeding insects and non-parasitic fungi. These mold fungi do not infect the plant tissues—their damage is cosmetic-yet the science of plant pathology treats them as plant diseases because of their negative effects on photosynthesis: they block sunlight from reaching leaf chloroplasts, where the plant “harvests the sun” and produces energy for growth. Sooty mold is also a significant postharvest problem for some vegetable and fruit commodities. The disease creates aesthetically disagreeable fruit spots that reduce the produce’s quality, grade, and marketability.
Disease Category	Continuous
Symptoms	Using the sugary honeydew as a food source, the sooty mold fungi begin to grow on the plant sugars deposited by parasitic insects on the foliage, turning the surface various shades of black. No infection occurs since the fungi are non-parasitic and non-pathogenic to plants. Any plant that hosts phloem-feeding insects or upon which honeydew from these insects accumulates is susceptible to sooty mold. The problem occurs widely throughout the world’s temperate and tropical regions. The fungi are indiscriminate in their selection of a host, requiring only that honeydew be present on it. The negative effects of sooty mold on plants include reduced leaf photosynthesis and gas exchange, cosmetic damage reducing

	marketability of plants or produce and loss of quality from the aesthetic attributes of landscapes and unhealthy mold spore counts in processed juices and purees made from infested materials.
<b>Conditions prevailing that contribute to success</b>	High presence of sap- or phloem-feeding insects associated with the disease such as whiteflies, aphids, mealy bugs, and scales and the existence of honeydew. The fungi survive saprophytically as mycelium or spores on plant debris or on inanimate objects such as vehicles.
<b>Control Strategy</b>	<p><b><u>Cultural control</u></b> The best way to control most sooty mold fungi is to prevent their establishment by eliminating their sugary food supply. Thus, control phloem-feeding insects on the foliage. Controlling the phloem-feeding insects may require control of the ants that tend and protect them. Once sooty mold occurs, an insect control program should be started. Choice of insecticide depends on the site of application and the target pest(s). Read the insecticide label carefully to ensure that the intended plant (the “site”) and targeted insect(s) are specified on it, and follow all label directions. If high-value plants are affected, sooty mold can be carefully washed from plants using soapy water or dilute household bleach solution (1 part bleach to 99 parts water). Because sooty molds are fungi, general-purpose fungicides applied to control other diseases may have some effect in killing them and minimizing their spread, although fungicide applications will not remove the black colouring.</p> <p><b><u>Biological control</u></b> In this series of events, ants often tend and protect the phloem-feeding insects, feed upon the excreted honeydew, and protect the parasitic insects from their natural enemies.</p> <p><b><u>Others</u></b></p> <ul style="list-style-type: none"> <li>• Dip or wash produce after harvest using dilute solutions of sodium hypochlorite (household bleach).</li> <li>• Control phloem-feeding insects with insecticides (note, however, that use of insecticides often kills pests’ natural enemies, as well as the pests).</li> <li>• Control ants with physical barriers or insecticide baits.</li> <li>• Control sooty mold fungi with fungicides.</li> <li>• Moderate use of fertilizers, because over-fertilization can attract certain phloem-feeding insects.</li> </ul>
<b>Mode of spread</b>	Existence of phloem-feeding insects associated with the disease such as whiteflies, aphids, mealy bugs, and scales and the presence of honeydew. Movement of mycelium or spores on plant debris or on inanimate objects such as vehicles.
<b>Mandate Centres</b>	All KARI centres in the mango growing areas
<b>Reference Links</b>	<a href="http://www.plantwise.org/KnowledgeBank/CountryHome.aspx">http://www.plantwise.org/KnowledgeBank/CountryHome.aspx</a>
<b>Geographic Coverage</b>	<p>The pest has been reported in the light brown highlighted counties but this will expand after a full country survey is conducted. The border counties are also likely to have the pest.</p> <p>The disease is not new in Kenya. It was reported in coastal Kenya in the late 1980’s but now has spread to most parts of the mango producing counties in the country (see map below showing where it has been cited). It has been recorded in Coast, Eastern, Central, Rift Valley, Western, Nyanza and parts of North Eastern regions.</p>
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