




# African Cassava Mosaic Disease (ACMD)

*Cassava Mosaic Virus* Khate la chinangwa

	Prevention	Monitoring	Direct Control	Direct Control	Restrictions
 <p>Symptoms on the leaves caused by Cassava Mosaic Virus (Eric Boa)</p>	<ul style="list-style-type: none"> <li>This viral disease is spread mainly through insected cuttings used as planting material and is also transmitted by whiteflies (<i>Bemisia tabaci</i>)</li> <li>Planting material can look healthy but the disease can be present so plant certified disease free cuttings supplied by: Chitedze, Bvumbwe, and Lunyangwa research stations or <b>use resistant varieties: Sauti, Sagonja komanso, Beatrice</b></li> <li>Avoid mixing planting materials i.e. certified and non-certified planting materials</li> <li>Sterilize tools used to prepare cuttings with fire</li> <li>Practice crop rotation with maize or sweet potato every other growing season</li> <li>Remove weeds to discourage habitat for the vectors</li> <li>Intercrop with maize or cowpeas to repel whiteflies</li> </ul>	<ul style="list-style-type: none"> <li>Check the cassava plants weekly for symptoms as soon as the plants start to sprout</li> <li>Look for yellow/white mottled spots on the leaves, wrinkled and deformed leaves, and the presence of small whiteflies on the leaves especially on the lower side of the leaf</li> <li>Also look for yellowing and very tiny leaves, tiny stems, stunted growth and small tubers</li> <li>Apply green direct controls as soon as disease symptoms are seen and yellow direct controls when whiteflies are present</li> </ul>	<ul style="list-style-type: none"> <li>Uproot all infested plants once they are observed from the field/garden. Dry and burn far from the field (100m)</li> </ul>	<ul style="list-style-type: none"> <li>Use personal protective equipment when handling and applying pesticides, follow the label recommendations. Do not eat, drink, smoke when mixing or applying pesticides.</li> <li>Do not apply insecticides in areas where cassava leaves are harvested for food</li> <li><b>Using insecticides to manage insect vectors of ACMD is not advised for small-scale farmers, it is usually ineffective and not cost effective</b></li> <li>Apply cypermethrin 20g/L (Cypermethryn 20EC; Cyrux 20EC) at a rate of 5ml per 20L water. Contact and stomach acting pyrethroid. IRAC group: 3A</li> <li>Apply deltamethrin 25g/L (Decis EC; Deltamethrin EC) at a rate of 70ml per 100L water. Pyrethroid with contact and residual activity. IRAC group: 3A</li> </ul>	<ul style="list-style-type: none"> <li>For larger producers growing planting materials (cuttings) it might be advisable to use insecticide to manage white flies using the insecticides listed below</li> <li>WHO II - Moderately hazardous. Apply when whiteflies are noticed. Very toxic to aquatic animals do not spray near water</li> <li>WHO II - Moderately hazardous. Apply when whiteflies are noticed. Very toxic to aquatic animals do not spray near water</li> </ul>
 <p>White fly infestation on the underside of a cassava leaf (Neil Palmer, CIAT)</p>					
 <p>Adult white fly, <i>Bemisia tabaci</i> (©John Innes Institute)</p>					



## Malawi

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