

Maize lethal necrosis disease in maize

Maize lethal necrosis disease MLND (combination of two viruses, Maize Chlorotic Mottle Virus (MCMoV) and Sugarcane Mosaic Virus (SCMV) or other cereal viruses)

	Prevention	Monitoring	Direct Control	Direct Control	Restrictions
 <p>MLND wide and narrow yellowing on maize (Stefan Toepfer)</p>	<ul style="list-style-type: none"> Plant using certified seed from reliable suppliers Rotate maize with non-cereal crops such as sweet potato or beans for a period of 2-3 seasons if MLND had attacked your or neighbouring fields 	<ul style="list-style-type: none"> Maize Lethal Necrosis Disease (MLND) is expected to invade Zambia. Inspect fields weekly for vector insects and the disease symptoms. MLND-infected maize will not yield a cob, thus losses are high 	<ul style="list-style-type: none"> Report to the Ministry of Agriculture of any suspicions of MNLND since it has not yet been recorded in the country 	<ul style="list-style-type: none"> There are no pesticides against MLND 	<ul style="list-style-type: none"> Control the MLND - vectoring plant hoppers only if neighbouring fields are infested and yours not or little. This is because plant hoppers are difficult to control as they can re-immigrate into fields after spray.
 <p>Plants dwarf. Finally, the entire plant dries and dies (Stefan Toepfer)</p>	<ul style="list-style-type: none"> Do not plant maize near fields with infested maize as the disease will spread into your field 	<ul style="list-style-type: none"> Look for yellow stripes on leaves which are much wider than those of Maize streak virus. MLND causes yellow stripes that later lead to drying, stunted growth, failure to tassel, no grain filling in cobs and death of the whole plant leading to the whole field having plants with dried appearance Angular leaf spot disease also causes necrotic dead leaf areas but only in spots and not entire leaf edges or leaves as for MLND Consider taking action as soon as few plants shows these symptoms 	<ul style="list-style-type: none"> Immediately uproot and bury infected plants at least 5 cm, when seen in the field. Do not hesitate to do so, as plants will have no grains in cobs anyway. 	<ul style="list-style-type: none"> When using a pesticide, always wear protective clothing and 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 and water sources. 	<ul style="list-style-type: none"> WHO toxicity class II products may not be allowed in local IPM schemes.
 <p>Leafhoppers: greenish hopping insects 4mm, vectcours MLND (Lynett Elliot)</p>	<ul style="list-style-type: none"> Avoid movement of green maize from infected areas to disease-free areas 	<ul style="list-style-type: none"> Look for thrips (tiny yellowish-green slender insects) and leafhoppers (small 0.5 cm greenish insects, jumping) on leaves as they spread the disease. If planthoppers and thrips are seen on a number of plants you may consider action if disease is in neighbouring fields or has just arrived in your field. If many plants in a field show MLND symptoms vector control is too late. 		<ul style="list-style-type: none"> Always consult recent list of registered pesticides of ZEMA of Zambia Apply malathion-based products to leaves (organophosphate). Usually at a rate of 20-30 ml/20 L but double-check label as products differ 	<ul style="list-style-type: none"> WHO toxicity class III (slightly acute hazardous); p.h.i. 14 days; r.e.i. 3 days; maximum sprays 2 times/season. Moderately toxic to aquatic organisms; Highly toxic to bees. Possibly carcinogen.
				<ul style="list-style-type: none"> Apply Deltamethrin-based products (pyrethroid) following the recommendation on the product label. 	<ul style="list-style-type: none"> WHO class II (Moderately hazardous), p.h.i. 3 days; r.e.i. 0.5 days. Toxic to bees and to aquatic organisms; To be applied only once per season (Alternate with other pesticides)



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