

Black Sigatoka on bananas

Mycosphaerella fijiensis (Also known as *Pseudocercospora fijiensis*)

	Prevention	Monitoring	Direct Control	Direct Control	Restrictions
<p>Range of symptoms on a banana leaf including brown/black streaking, yellow colouration of the tissue and necrosis (Scot Nelson, www.flickr.com)</p>	<ul style="list-style-type: none"> Use disease free planting material Use tolerant or resistant varieties e.g. TMBX and SH 3640, FHIA 02, FHIA 03, FHIA 17 Do not move infected plant material into an uninfected area Use recommended spacing (2.5m apart) to ensure good air circulation which allows the leaves to dry quickly after rains. Avoid too shade from trees Ensure good drainage and plant in well drained soils - avoid clay soils Weed frequently 	<ul style="list-style-type: none"> Monitor the crop closely during wet or humid conditions as these are optimal conditions for the disease to spread Early symptoms on leaves are small red/brown streaks (1-5mm long by 0.25mm wide) parallel to the veins on the underside of the 3rd or 4th young leaf As the disease progresses the streaks expand and become noticeable on the leaf surface. Grey lesions develop with sunken centres they have black margins with bright yellow halos The streaks join together forming bands of dead areas several cm wide and the leaves collapse and die Take action as soon as the first symptoms are seen 	<ul style="list-style-type: none"> Collect older infected leaves on a regular basis and take them out of the plantation and burn them Alternatively heap the infected leaves on top of each other with the lower surface of the leaves facing downwards to reduce the spread of the disease 	<ul style="list-style-type: none"> Use personal protective equipment when handling and applying pesticides, follow the label recommendations. Do not eat, drink, smoke when mixing or applying pesticides. Not recommended for small holder farmers. Larger scale/commercial banana producers may use the options below: Mancozeb 800g/kg (Dithane M45 WP; Emthane M45; Mancozeb WP; Uthane 800 WP) at a rate of 2.5kg/100L of water (plus 4-5L of light/medium mineral oil) FRAC group: M3 Chlorothalonil 500g/L (Chloroflo 500 SC) 5.6L/ha FRAC group: M5 Tebuconazole 250g/L (Folicur 250 EW; Tenazole 250 EW) apply at 750ml/ha FRAC group: 3 Mancozeb 64%+ Metalaxyl 8% WP at 2.5kg/100L of water (plus 4-5L of light/medium mineral oil) FRAC groups: M3 & A1 	<ul style="list-style-type: none"> The FRAC has reported that <i>M. fijiensis</i> has a high risk of developing resistance to fungicides, so careful fungicide management is required WHO Classification U (Unlikely to present acute hazard in normal use) Spray when disease symptoms appear WHO Classification U (Unlikely to present acute hazard in normal use) Spray when disease symptoms appear and ensure thorough coverage of the leaves WHO Classification II (Moderately hazardous) Apply in 300L of water/ha. Spray as soon as symptoms appear and repeat as necessary WHO Classification U (Unlikely to present acute hazard in normal use) and II (Moderately hazardous). Spray when disease symptoms appear
<p>Advanced stages showing dead tissue on the leaf (Scot Nelson, www.flickr.com)</p>					



Malawi

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