

# Breadfruit Diseases and Symptoms

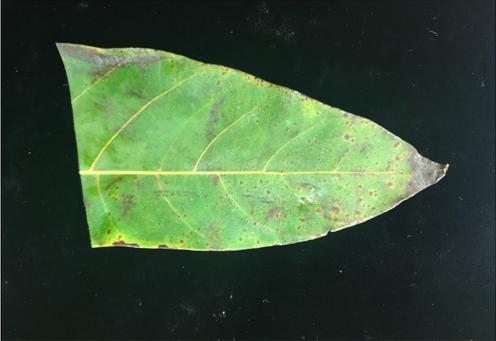
Causal Agent	Threat	Symptom	Description	Photos
<i>Alternaria</i>	Low	Leaf spots	Small dark spots with yellowish margin	
	<u>Type</u> Fungi			
<b>Management Strategies</b>				
Avoid excess moisture; increase drainage; recommend wider tree spacing, active pruning, and good air circulation				

Photo Credit: Noa Lincoln

Causal Agent	Threat	Symptom	Description	Photos
<i>Cephaleuros virescens</i>	Low	Algal growth	Orange growth superficial to the leaf	
	<u>Type</u> Green Algae			
<b>Management Strategies</b>				
Maintain good tree health				

Photo Credit: pestnet.org

Causal Agent	Threat	Symptom	Description	Photos
<i>Colletotrichum gloeosporioides</i>	High	Leaf	Rust colored spots that expand to have gray center; can blight	
		Stem	Darkening of petioles and stems, reduced vigor or dieback of stems	
<b>Teleomorph</b>	<b>Type</b>	anthracnose		
<i>Glomerella cingulata</i>	Fungi	Fruit	Dark brown spots on skin that expand to large, hard lesion	
<b>Management Strategies</b>				
Maintain good tree health				

Photo Credit: Takena Redfern

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Causal Agent	Threat	Symptom	Description
<i>Fusarium</i>	High	Leaf spots	Amorphous dark brown spots
		Twig and root rot	Browning, black or brown streaking, deformation or cracking
Species	Type		
<i>F. equiseti</i> , <i>solani</i> , and <i>pallidoroseum</i>	Fungi	Fruit spots	Small, isolated light-brown spots that can merge to cause solid discoloration

**Photos**



Photo Credit: Abigail Jones

**Management Strategies**

Use vegetative ground cover, use of bio-fertilizers including *Bacillus* bacteria or *Trichoderma* fungus

Causal Agent	Threat	Symptom	Description
<i>Geotrichum</i>	Moderate	Fruit soft rot	Small lesions that soften and rapid internal rotting of fruit
	<b>Type</b>		
	Fungi		

**Photos**



Photo Credit: Abigail Jones

**Management Strategies**

Remove infected fruit from site; improve airflow to trees

Causal Agent	Threat	Symptom	Description
<i>Lasiodiplodia theobromae</i>	Moderate	Trunk and collar rot	Stem dieback often starting with older growth
	<b>Type</b>	Leaf spots	Small black spots
	Fungi	Fruit soft rot	External browning associated with internal sort rot

**Photos**



Photo Credit: Takena Redfern

**Management Strategies**

Remove infected fruit or branches from site; external application of fungicide

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Causal Agent	Threat	Symptom	Description	Photos
<i>Macrophoma</i>	Low	Leaf spots	Small black spots	
	<b>Type</b>			
	Fungi			
<b>Management Strategies</b>				
Pruning, thinning; improved airflow to leaves				

Photo Credit: Takena Redfern

Causal Agent	Threat	Symptom	Description	Photos
<i>Pestalotiopsis</i>	Low	Leaf Spots	Stem dieback starting at growing tips	
	<b>Type</b>			
	Fungi			
<b>Management Strategies</b>				
Application of fungicides to prevent spread				

Photo Credit: Takena Redfern

Causal Agent	Threat	Symptom	Description	Photos
<i>Phoma</i>	Moderate	Leaf spots	Small, dispersed dark brown spots with rust colored margins	
	<b>Type</b>	Twig rot	Light brown/reddish streaks	
	Fungi	Fruit spots	Small, dark brown/black spots	
<b>Management Strategies</b>				
Pruning, removal of infected areas, application of fungicides				

Photo Credit: usu.edu and Abigail Jones

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Causal Agent	Threat	Symptom	Description
<i>Phytophthora</i>	High	Twig, branch, and tree dieback	General decline of vigor, withering, and dieback of branches and roots
Species	Type		
<i>P. palmivora</i> and <i>P. tropicalis</i>	Oomycetes	Fruit rot and mummification	Round lesions with characteristic white ring at growing front



Photos

Photo Credit: Takena Redfern

**Management Strategies**

Clean water sources needed; reduce humidity; avoid wetting trunk or leaves; remove dead leaves and branches; use of leaf litter; application of copper fungicides or dithiocarbamates; application of Bordeaux mixture

Causal Agent	Threat	Symptom	Description
<i>Rhizopus artocarp</i>	Moderate	Soft fruit rot	Stem dieback starting at growing tips
	Type		
	Fungi		



Photos

Photo Credit: Abigail Jones

**Management Strategies**

Removed infected fruits; application of Bordeaux mixture

Causal Agent	Threat	Symptom	Description
<i>Uredo artocarpus</i>	Low	Leaf rust	Rust colored spots
	Type		
	Fungi		



Photos

**Management Strategies**

Maintain good tree health

Photo Credit: Noa Lincoln