

# Minor fungal diseases

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## Black rot

Cause: *Ceratocystis adiposa* (E.J. Butler) C. Moreau (anamorph = *Chalara* sp.).

Geographical distribution: Australia, Brazil, China, Dominican Republic, Hawaii, India, Indonesia, Panama, Peru, Taiwan, USA.

Symptoms: purplish to black, soft watery rot of sugarcane seed cuttings; rot often confined to the end of internodes; production of a mass of black, cottony fungal growth on the cut ends; symptoms resemble those of pineapple disease.

### References

ABBOTT E.V., 1964. Black rot. *In*: Sugar-Cane Diseases of the World, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 99–102. Amsterdam, The Netherlands, Elsevier Publishing Company.

BYTHER R.S., 1971. Black rot of sugarcane cuttings in Hawaii. *Plant Disease Reporter* 55: 7–9.

SIVANESAN A., WALLER J.M., 1986. *Ceratocystis* Ell. & Halsted. *In*: Sugarcane Diseases. Phytopathological Paper No. 29, p. 14–16. Slough, UK, CAB International.

## Black stripe

Cause: *Pseudocercospora atrofiliiformis* (W.Y. Yen, T.C. Lo & C.C. Chi) Yen.

Geographical distribution: Taiwan.

Symptoms: narrow, dark brown to black streaks 5–36 mm long by 0.5–1.2 mm wide on the leaf blades, between veins.

### References

SIVANESAN A., WALLER J.M., 1986. *Pseudocercospora* Speg. *In*: Sugarcane Diseases. Phytopathological Paper No. 29, p. 49–52. Slough, UK, CAB International.

YEN W.Y., LO T.C., CHI C.C., 1964. Black stripe. *In*: Sugar-Cane Diseases of the World, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 21–23. Amsterdam, The Netherlands, Elsevier Publishing Company.

## Collar rot

Cause: *Hendersonia sacchari* E.J. Butler.

Geographical distribution: Argentina, Bangladesh, Brazil, India, Mauritius, Pakistan, Philippines, Sri Lanka.

Symptoms: wilting and internal rot (external symptoms similar to those of true red rot); withering of top leaves from the tips along the edges, with the midrib only remaining green; dry and pithy tissues in the upper internodes; tissues watery and brown with red streaks in tissues in the lower internodes; blackened and rotted roots arising from the basal nodes.

### References

ABBOTT E.V., 1964. Collar rot. *In: Sugar-Cane Diseases of the World, Vol. 2.* C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 105–107. Amsterdam, The Netherlands, Elsevier Publishing Company.

SIVANESAN A., WALLER J.M., 1986. *Hendersonia* E. Butler. *In: Sugarcane Diseases.* Phytopathological Paper No. 29, p. 53–54. Slough, UK, CAB International.

## Dry rot

Cause: *Physalospora rhodina* M.C. Cooke.

Geographical distribution: Barbados, Brazil, Cameroon, Cuba, Dominican Republic, Guyana, India, Indonesia, Jamaica, Malaysia, Mexico, Myanmar, Philippines, Puerto Rico, Sri Lanka, Trinidad.

Symptoms: shrunken and shrivelled canes; reddened and dark coloured internal stalk tissues; eruption of fruiting bodies of the pathogen in rows of elongate blisters on the rind (similar to those of rind disease); primarily on overripened cane.

### Reference

ABBOTT E.V., 1964. Dry rot. *In: Sugar-Cane Diseases of the World, Vol. 2.* C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 108–109. Amsterdam, The Netherlands, Elsevier Publishing Company.

## Iliau

Cause: *Clypeoporthe iliau* (H.L. Lyon) M.E. Barr = *Gnomonia iliau* H.L. Lyon [anamorph = *Phaeocystostroma iliau* (H.L. Lyon) Sivanesan].

Geographical distribution: thought to be widely distributed but rarely reported (Australia, Brazil, Cuba, Hawaii, Mauritius, Philippines, USA).

Symptoms: binding of the leaf sheaths into a firm and tight case surrounding the growing point; distortion of emerging stems in moderately affected cane; frequent breakage of weakened young plants; death of the outer leaves, sheaths and stalks of severely affected cane (Figure 1).

## References

MARTIN J.P., 1964. Iliau. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 114–118. Amsterdam, The Netherlands, Elsevier Publishing Company.

SIVANESAN A., WALLER J.M., 1986. *Clypeoportha* Höhnel. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 18–19. Slough, UK, CAB International.

## Leaf blast

Cause: *Didymosphaeria taiwanensis* W.Y. Yen & C.C. Chi.

Geographical distribution: Taiwan.

Symptoms: yellowish, elongate and narrow spots parallel to the leaf blade veins; purplish-red lesions, 3–25 mm long by 0.5–1.0 mm wide on both leaf surfaces; entire leaf may appear purplish-red by numerous coalescing lesions; withering and death of affected leaves from the tip downwards.

## Reference

YEN W.Y., CHI C.C., 1964. Leaf blast. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 29–31. Amsterdam, The Netherlands, Elsevier Publishing Company.

## Leaf splitting

Cause: *Peronosclerospora miscanthi* (T. Miyake) C.G. Shaw = *Sclerospora miscanthi* T. Miyake; *P. northii* (W.H. Weston) C.G. Shaw, *Peronosclerospora* sp., *Mycosphaerella striatiformans* N.A. Cobb.

Geographical distribution: *Peronosclerospora miscanthi* in Papua New Guinea (?), Philippines and Taiwan; *P. northii* in Fiji; *Peronosclerospora* sp. in India; *Mycosphaerella striatiformans* in Fiji, Hawaii, Indonesia and Papua New Guinea.

Symptoms: narrow yellow to dark red leaf streaks, often extending the entire leaf; parenchyma tissue in streaks disintegrate between vascular bundles splitting leaves into numerous partially connected thread-like vascular bundles, appearing like long-tangled coarse hair; some stunted plants may die (Figure 2).

## References

CHU H.T., 1964. Leaf-splitting disease. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 37–39. Amsterdam, The Netherlands, Elsevier Publishing Company.

SIVANESAN A., WALLER J.M., 1986. *Peronosclerospora* (Ito) Shirai & K. Hara. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 58–61. Slough, UK, CAB International.

## Marasmius sheath rot and shoot blight; root rot

Cause: *Marasmiellus stenospilus* (Montagne) R. Singer = *Marasmius stenospilus* Montagne; *Marasmius sacchari* Wakker; *Rhizoctonia* sp.; unidentified oomycete.

Geographical distribution: thought to be widely distributed (Barbados, Indonesia, Mauritius, Peru, Philippines, Puerto Rico, USA).

Symptoms: white mycelium present between leaf sheath and stalk; rotting of leaf sheaths near base; death of stem at or below soil surface.

### References

RANDS R.D., ABBOTT E.V., 1964. Basal stem, root and sheath rots. Part 1. *In*: Sugar-Cane Diseases of the World, Vol 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 89–93. Amsterdam, The Netherlands, Elsevier Publishing Company.

STEINDL D.R.L., EGAN B.T., 1964. Basal stem, root and sheath rots. Part 2. *In*: Sugar-Cane Diseases of the World, Vol 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 94–98. Amsterdam, The Netherlands, Elsevier Publishing Company.

SIVANESAN A., WALLER J.M., 1986. *Marasmius* Fr. *In*: Sugarcane Diseases. Phytopathological Paper No. 29, p. 11. Slough, UK, CAB International.

## Myriogenospora leaf binding

Cause: *Myriogenospora aciculispora* Vizioli.

Geographical distribution: Argentina, Australia, Brazil, USA (Louisiana).

Symptoms: severe stunting and adherence of the tips of the unfolding leaves to the adjacent older leaves by a black stroma of the pathogen; the adhering older and emerging leaves form a circular hoop that may look like a whip; the shoot may die (Figure 3).

### References

ABBOTT E.V., 1964. *Myriogenospora* leaf binding. *In*: Sugar-Cane Diseases of the World, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 40–42. Amsterdam, The Netherlands, Elsevier Publishing Company.

SIVANESAN A., WALLER J.M., 1986. *Myriogenospora* Atk. *In*: Sugarcane Diseases. Phytopathological Paper No. 29, p. 35. Slough, UK, CAB International.

## Phyllosticta leaf spot

Cause: *Phyllosticta hawaiiensis* Caum, *Phyllosticta* sp.

Geographical distribution: Colombia, Cuba, Hawaii, India, Malawi, Nepal, Panama, Philippines, Puerto Rico, South Africa, USA, Zambia, Zimbabwe.

Symptoms: small, irregular, light-brown straw-coloured spots on leaf sheath located close to where leaf attaches; fungus associated with older spots of ring spot.

## References

- ABBOTT E.V., 1964. Ring spot. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 52–58. Amsterdam, The Netherlands, Elsevier Publishing Company.
- MARTIN J.P., 1938. Phyllosticta spot. *In: Sugar cane diseases in Hawaii*. p. 84–85. Honolulu, Experiment Station of the Hawaiian Sugar Planters' Association.

## Phytophthora rot of cuttings

Cause: *Phytophthora* spp.; *Phytophthora megasperma* Drechsler.

Geographical distribution: USA.

Symptoms: water-soaked rot of cuttings; orange-red streaking through interior of cuttings (Figure 4).

## References

- STEIB R.J., 1964. Phytophthora seed piece rot. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 120–123. Amsterdam, The Netherlands, Elsevier Publishing Company.
- SIVANESAN A., WALLER J.M., 1986. *Phytophthora* de Bary. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 62–64. Slough, UK, CAB International.

## Seedling foliage blights

Cause: *Alternaria alternata* (E.M. Fries: E.M. Fries) von Keissler; *Cochliobolus hawaiiensis* Alcorn [anamorph = *Bipolaris hawaiiensis* (M.B. Ellis) J.Y. Uchida & Aragaki]; *Cochliobolus lunatus* R.R. Nelson & F.A. Haasis [anamorph = *Curvularia lunata* (Wakker) Boedijn]; *Curvularia senegalensis* (Spegazzini) C.V. Subramanian; *Bipolaris sacchari* (E.J. Butler) Shoemaker; *Setosphaeria rostrata* K.J. Leonard [anamorph = *Exserohilum rostratum* (Drechsler) K.J. Leonard & E.G. Suggs = *Drechslera halodes* (Drechsler) C.V. Subramanian & P.C. Jain].

Geographical distribution: Cuba, India, Taiwan (*Alternaria*); Argentina, Hawaii, India (*Cochliobolus*); widespread (*Drechslera*); India, Puerto Rico, USA (*Setosphaeria*).

Symptoms: blight of seedlings (*Alternaria* and *Drechslera*). Circular to oval, scattered, reddish-brown leaf spots; the spots may enlarge into irregular patches and turn dark brown with age; the entire leaf blade may turn yellow and dry up (*Cochliobolus*). Narrow, reddish, elongated broken stripes that become dark brown with age; stunted seedlings (*Setosphaeria*).

## References

- BYTHER R.S., STEINER G.W., 1972. Four sugarcane seedling diseases in Hawaii: Causal agents, control and a selective medium for isolation. *Phytopathology* 62: 120–124.

SIVANESAN A., WALLER J.M., 1986. *Alternaria* Nees. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 39–40. Slough, UK, CAB International.

SIVANESAN A., WALLER J.M., 1986. *Cochliobolus* Drechsler. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 19–22. Slough, UK, CAB International.

SIVANESAN A., WALLER J.M., 1986. *Drechslera* Ito. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 43–47. Slough, UK, CAB International.

SIVANESAN A., WALLER J.M., 1986. *Setosphaeria* Leonard & Suggs. *In: Sugarcane Diseases*. Phytopathological Paper No. 29, p. 37–38. Slough, UK, CAB International.

## Target blotch

Cause: *Helminthosporium* sp. Priode.

Geographical distribution: Cuba, India, Japan, South Africa, Thailand, USA, Zimbabwe.

Symptoms: minute, reddish-brown spots; straw-coloured to brownish necrotic areas with irregular, concentric rings roughly resembling a target.

### Reference

TODD E.H., 1964. Target blotch. *In: Sugar-Cane Diseases of the World*, Vol. 2. C.G. Hughes, E.V. Abbott and C.A. Wismer (Eds), p. 74–77. Amsterdam, The Netherlands, Elsevier Publishing Company.



Figure 1. Iliau: binding of leaf sheaths and distortion of emerging stem (S. Matsuoka).



Figure 2. Leaf splitting: split leaves looking like long-tangled coarse hair (J.C. Comstock).



Figure 3. Myriogenospora leaf binding: adhering leaves (BSES).

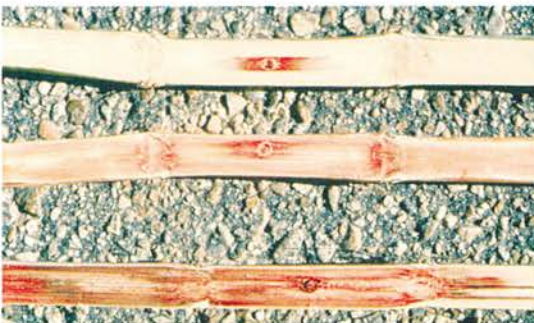


Figure 4. Phytophthora rot of cuttings: orange-red streaking inside cuttings (J. Hoy).