Research Note

FIRST REPORT OF ALGAL LEAF SPOT CAUSED BY CEPHALEUROS VIRESCENS KUNZE ON LONGAN TREES IN PUERTO RICO[1,2]

Margarita Ferwerda-Licha[3]

J. Agric. Univ. P.R. 86(1-2):65-66 (2002)

The longan (*Dimocarpus longan* Lour.; Sapindanaceae) is a tree cultivated in Southeast Asia. It is reported to have originated in northeastern India, Burma or southern China (Morton, 1987; Nakasone and Paull, 1998); it thrives at elevations between 150 to 450 m. The United States Department of Agriculture introduced the longan into Florida in 1903, and the first tree in Puerto Rico was planted at the Federal Experiment Station in Mayagüez, in 1926 (Morton, 1987).

At present, USDA-ARS-TARS has established experimental plots of commercial clones of longan in several different environments of the island, including the University of Puerto Rico Agricultural Experiment Station in Adjuntas. The station is located in the central mountain region, latitude 180° 11' N at 550-m elevation with mean minimum and maximum temperatures of 14.8 and 27.7 °C, respectively. The mean annual rainfall is 1,767 mm.

In May 2001, leaves of longan trees that were intercropped with bananas were observed to have algal leaf spots. Symptoms were round bright orange tufts, slightly raised with a velvet-like appearance on the upper leaf surface. The orange tuft is the thallus of the alga; the orange coloration is due to discoid-shaped chloroplasts that contain B-carotene (Manicom and Pruvost, 1994). The symptoms were more prevalent on older leaves in the lower third of the trees. Examination of free-hand sections under the microscope shows that the thallus develops subcuticularly in the leaf, is erect, and from it arise branches bearing apical cells that enlarge and produce terminal sporangia of about 31 × 23 µm. Sporangia produce biflagellate zoospores. Sexual reproduction occurs by formation in the thallus of bottle-shaped gametangia, which release biflagellate gametes in the presence of water (Manicom and Pruvost, 1994). The gametes are disseminated by wind and water. The alga was identified as the green alga *Cephaleuros virescens* Kunze of the family Trentepholiaceae and the division Chlorophyta. Identification was done after examination of structures under the microscope (Suematu, 1962). This algal disease affects plants in tropical and subtropical regions, where it is particularly serious in tea, *Thea sinensis* L., rubber, *Hevea brasiliensis* Muell, and cacao, *Theobroma cacao* L. (Alfieri, 1969). The alga has also been found in coffee, citrus and mango trees (Nowell, 1923; Knorr, 1973; Marlatt and Campbell, 1980; Marlatt and Alfieri, 1981). This is the first report of *C. virescens* causing spots on longan tree leaves in Puerto Rico. Although the incidence and severity appear to be small in current plantings, this alga might become a serious problem as the longan tree becomes better known and its cultivation increases on

[1]Submitted to the Editorial Board 21 November 2001.

[2]This paper covers work carried out cooperatively between the Agricultural Research Service-USDA and the Agricultural Experiment Station, University of Puerto Rico.

[3]Research Plant Pathologist, USDA-ARS-Tropical Agriculture Research Station, 2200 Pedro Albizu Campos Ave., Suite 210, Mayagüez, PR 00680.

the island. This pathogen was identified as well as its relevance in terms of the climate and growth conditions of the area. This identification will benefit commercial growers of the longan tree by allowing them to properly identify the problem at an early stage and apply control methods.

LITERATURE CITED

Alfieri, S. A., 1969. The green scurf disease caused by *Cephaleuros virescens* Kunze. Plant Pathology Circular No. 78. Florida Department of Agriculture. Division of Plant Industry.

Knorr, L. C., 1973. Citrus diseases and disorders. The Univ. Press of Fla., Gainesville. pp. 1-3.

Manicom, B. Q. and O. P. Pruvost, 1994. Mango diseases caused by nonfungal agents, pages 41-43. *In*: Ploetz, R. C. et al. (eds.). Compendium of Tropical Fruit Diseases. APS Press. St. Paul, MN. 88 pp.

Marlatt, R. B. and S. A. Alfieri, 1981. Hosts of a parasitic alga, *Cephaleuros virescens* Kunze, in Florida. *Plant Dis.* 65:520-522.

Marlatt, R. B. and C. W. Campbell, 1980. Incidence of algal disease (*Cephaleuros* sp.) in selections of guava (*Psidium guajava*). *Proc. Fla. State Hort. Soc.* 93:109-110.

Morton, J., 1987. Longan. pages 259-262. *In*: Fruits of Warm Climates. Ed. Curtis Dowling, Miami, Florida.

Nakasone, H. Y. and R. E. Paull, 1998. Tropical Fruits. CAB International, New York. 445 pp.

Nowell, W., 1923. Diseases of crop plants in the Lesser Antilles. Imperial Dept. of Agr., West Indian Committee, London. 383 pp.

Suematu, S., 1962. Morphological and ecological studies on Trentopholiaceae. Natur. Sci. Bull. Wakayama Univ. 12:15-52.