Occurrence of Bacterial Blight of Rice in Niger, West Africa

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ABSTRACT

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Bacterial blight of rice caused by *Xanthomonas campestris* pv. *oryzae* was found for the first time to an economically important extent in Niger. The most susceptible cultivar was Tountchen 22.

Although the main crops in Niger are millet, sorghum, and cowpea, rice culture has a long tradition, especially along the Niger River, where peasant farmers grow low-yielding local cultivars. Efforts to intensify rice production have been made, especially in the Tillabery and Niamey regions, where farmers grow rice under the supervision of a cooperative. In 1981, these irrigated fields comprised 4,500 of the estimated 21,000 ha used for rice production. About 38,000 t of rice are produced annually, more than half on irrigated land.

Reports of bacterial blight of rice caused by *Xanthomonas campestris* (Pam.) Dows. pv. *oryzae* (Ishiyama) Dye in Africa are rare. The disease has been reported in Mali (1), the Cameroons (2), and Senegal (3). In 1978, some instances of bacterial blight of rice were observed in western Niger (M. Daffé, *personal communication*) but did not receive special attention.

During the 1982 growing season, rice leaf blight in Niger appeared for the first time as an economically important disease, in the Niamey area. The most susceptible cultivar was Tountchen 22, a high-yielding, fast-growing Chinese cultivar preferred by farmers. All Tountchen 22 plants were infected. Samples were sent to the Institut de Phytobactériologie in Angers, France, for confirmation of the identity of the causal bacterium.

The Saadia rice fields on the right bank of the Niger River near Niamey were severely infected, and other fields in the same region were infected to a lesser extent. The disease has not been found in Tillabery, and the incidence in other parts of Niger is being surveyed.

Both kresek symptoms resulting from early systemic infection and leaf lesions were observed. Systemically infected plants withered at an early stage and usually died (Fig. 1). Whether the plants with kresek symptoms were infected in the nurseries is not known, since the disease was not reported until weeks after the plants were transplanted. In some rice fields, symptom expression began at about the heading stage, with lesions at the tip or margins of the leaves (Fig. 2). The bright green to yellow stripes or flecks enlarged and spread downward, eventually becoming necrotic. Lesion margins were wavy, and parts adjacent to necrotic stripes also became bright green to yellow before turning necrotic. Both sides of infected leaves showed the characteristic yellow or orange droplets of bacterial exudate (Fig. 3).

Because the most efficient measure against bacterial blight is the use of resistant cultivars, a screening program with imported cultivars is being implemented for the 1983 growing season. Chemical control in the nurseries is also being tried.

Fig. 1. Dead rice plant systemically infected with bacterial blight (*Xanthomonas campestris* pv. *oryzae*).

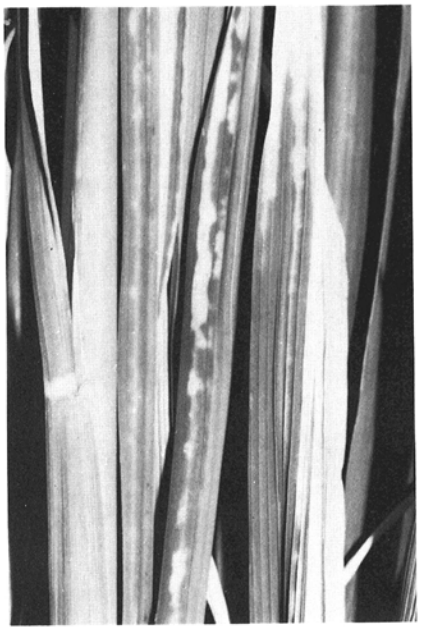

Fig. 2. Leaf lesions of bacterial blight of rice (*X. c.* pv. *oryzae*).

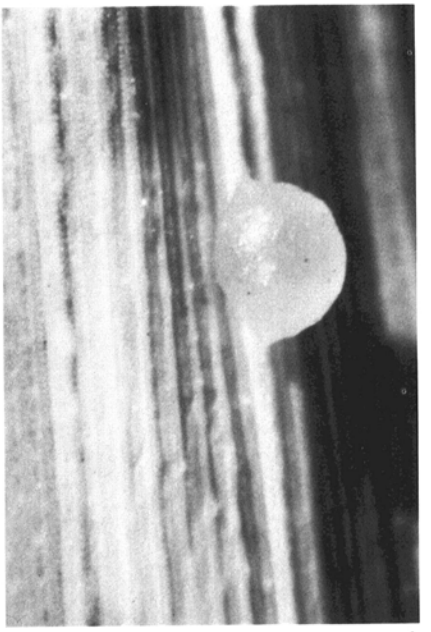

Fig. 3. Exudate of *X. c.* pv. *oryzae* on rice leaf.

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