

Pathogenicity of *Fusarium moniliforme* Sheld. Isolated from Banana(*Musa sapientum* L.)

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바나나에서分離한 *Fusarium moniliforme* Sheld.의病原性

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要 約

1985年에서 1986年, 全南地方과 濟州地方에서 採集한 바나나의 罹病葉과 罹病果에서 *Fusarium moniliforme* Sheld. 가 빈번하게 分離되었다. 分離된 *F. moniliforme* 의 大形分生胞子는 大部分 3個 내지 5個의 隔膜이 있고, 크기는 20.0 - 50.0 × 2.0 - 3.5 μm 였으며, 小形分生胞子の 크기는 5.0 - 12.0 × 1.5 - 2.5 μm 였다. 病原性檢定 結果, 이 菌의 分離菌株 中에는 病原性인 系統과 非病原性인 系統이 있음을 發見하였다. 接種試驗에 의해 病原性인 系統의 菌株들은 바나나의 잎에 잎끝마름병을 일으켰으며, 열매에는 열매끝썩음병과 樹冠썩음병을 일으켰다.

Diseased leaves and fruits of banana were collected from greenhouses of Jeonnam and Jeju provinces during the general survey of plant diseases from 1985 to 1986. *Fusarium moniliforme* Sheld. was frequently isolated from the leaves and fruits of banana (Plate 1). Macroconidia of the fungus were mostly three to five septate. The size of macroconidia was 20.0-50.0 x 2.0-3.5 μm, and that of microconidia was 5.0-12.0 x 1.5-2.5 μm. The results of pathogenicity tests revealed that there were some differences in terms of pathogenicity of the isolates of *F. moniliforme* to banana (Table 1). The isolates of JNL-85 were strongly pathogenic to fruits and leaves of banana, but the isolates of JNF-85 and JFF-86 were weakly pathogenic only to fruits.

Greene & Goos (2) reported that *F. moniliforme*

was weak rotter of banana. It has been, however, recorded that *F. moniliforme* caused collar or crown rot (1), and tip rot of fruit in banana (3). The pathogenicity tests by authors revealed that diseases of banana caused by the pathogenic isolates of *F. moniliforme* were fruit tip rot, crown rot and leaf margin blight as shown in Plate 2. The leaf margin blight caused by the fungus has not been recorded earlier on banana.

It has been reported that virulent, avirulent and mild virulent strains of *F. moniliforme* isolated from maize or rice existed (1). This report provides a new host record of *F. moniliforme* in Korea, and suggests that there are two strains of the fungus, pathogenic and nonpathogenic to banana.

Table 1. Pathogenicity of isolates of *Fusarium moniliforme* to fruits and leaves of banana

Isolate no.	Location collected	Source isolated	Reaction at 10 days after inoculation on	
			Fruit	Leaf
JNL-85 (3)	Jeonnam	Leaf	++ ^a	++
JNF-85 (2)	Jeonnam	Fruit	+	-
JJF-86 (2)	Jeju	Fruit	+	-

^a Healthy leaves and 30-day-old fruits of banana inoculated with conidia suspension by spraying were incubated in moist plastic boxes at $25 \pm 1^\circ\text{C}$ for 10 days. ++: severe symptom of fruit tip rot and leaf margin blight, + sporulation observed on fruit tip without symptom, -: no symptom/sporulation.



Plate 1. *Fusarium moniliforme* isolated from banana. Macroconidia and microconidia (upper part, X600); Conidiophores and microconidia in chains (lower part, X 200).

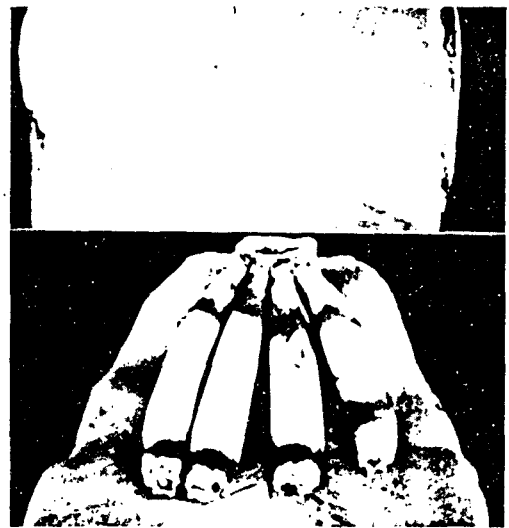


Plate 2. Symptoms on banana leaf and fruits at 10 days after spray inoculation with conidia suspension of a pathogenic isolate of *Fusarium moniliforme*.

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