

**DISCOVERY AND POSSIBLE SIGNIFICANCE OF
NECTRIAFURONE, 5-O-METHYLJAVANICIN,
AND RELATED COMPOUNDS PRODUCED BY
FUSARIUM OXYSPORUM F. SP. *VASINFECTUM***

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Abstract

Nectriafurone, 5-*O*-methyljavanicin, and other compounds believed to be polyketide naphthazarin quinones were isolated from cultures of pathogenic strains of *Fusarium oxysporum* f. sp. *vasinfectum* (*F.o.v.*), the causative agent of Fusarium wilt. These compounds often were not found in cultures of avirulent *Fusarium oxysporum* isolates obtained from cotton, suggesting they may play a role in pathogenicity. Nectriafurone was not appreciably phytotoxic to turnip or radish seedlings grown in water under shake conditions; however, 5-*O*-methyljavanicin and a few of the unknown compounds were phytotoxic to varying degrees. We also are interested in these compounds because a number of naphthazarin compounds related to nectriafurone are produced by isolates of *Fusarium solani* and *F. oxysporum* obtained from diseased citrus trees. The involvement of naphthazarins as a cause of blight in citrus has been suggested, and they have been shown to cause wilt, vessel plugging, and root rot in citrus seedlings, symptoms common to blight. For this reason it appears possible that naphthazarins also may play a role in Fusarium wilt of cotton.