Pathogenicity of Strains of *Mycena citricolor* from Different Hosts

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Abstract

There are differences in pathogenicity of strains recovered from different coffee varieties and companion vegetation. The infection success (IS), gemmae production capacity by lesion, incubation and latent periods, and pathogenicity index (PI) were calculated for each strain. We hypothesized that these differences are physiological and are not due to genetic variation.

Introduction

Conventionally, coffee farmers try to control American leaf spot disease by applying treatments directed to residual inoculum present on old damaged coffee leaves. However, the effectiveness of these treatments is low, particularly in Niña years where the epidemics increase faster. Our hypothesis is that there is a "hidden inoculum" not controlled, living all the year, in the companion vegetation (weeds and shade trees) which can efficiently contribute to the epidemic onset.

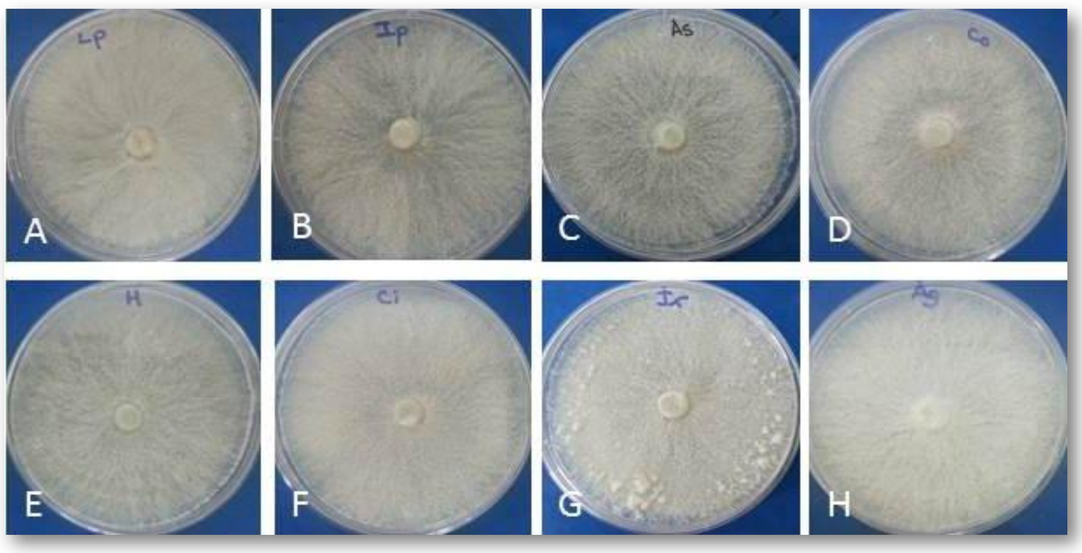

Figure 1. Eight strains of *M. citricolor* with 38 days. A) McSp B) McIn C) McCc D) McCo E) McPo F) McCv G) McIr H) McPa.

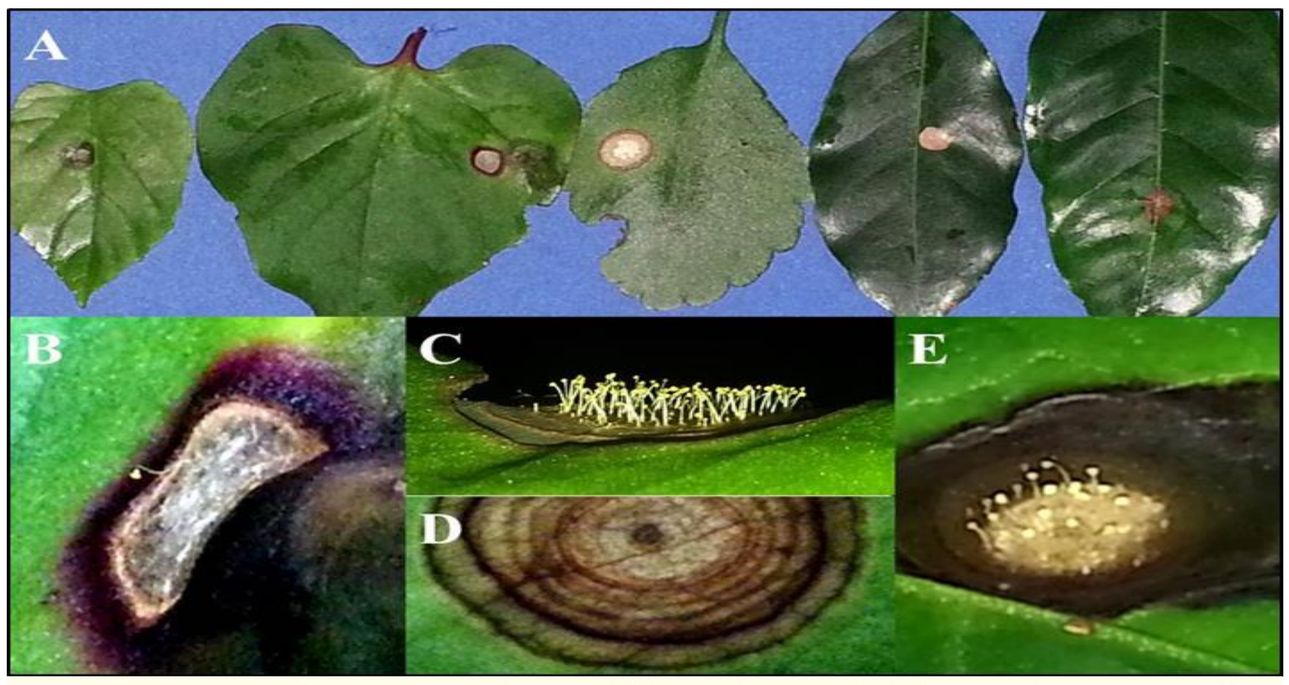

Figure 2. Lesiones by *M. citricolor* in different hosts. A) left to righ: *C. verticillata* (Cv), *A. cordifolia* (Ac), *B. calycinum* (Bc); Caturra (Ca) and Catimor (K) coffee varieties. B) *A. cordifolia* spot detail. C) Geminifers on *B. calycinum* lesion. D) Characteristic zonation in *B. calycinum* lesion. E) *C. verticillata* spot detail.

Main text

It collected leaves with symptoms or/and gemmae and were transported to the University of Costa Rica Phytopathology Lab for pathogen isolation or for direct inoculum picking. At least 15 gemmae were placed on the adaxial surface of healthy and fresh Caturra leaves of two years old. Were maintained into humid boxes at 20-21° C and 100% of relative humidity for 15 days, and at 24-25° C and approximatively 80% of relative humidity for other two weeks. The number of formed lesions, the mean diameter of each lesion and the quantity of geminifers produced were assessed each two days. The strain McK had a 100% IS, it was the first in producing lesions and started the geminifers production 6 days before McCa. The isolates with major PI were recovered from *Anredera cordifolia* (9.1), McK (9.9) and *Bryophyllum calycinum* (18.9). Caturra (McCa) only showed a PI of 3.67, reflecting a low pathogenicity.

Inoculum directly coming from field was more aggressive than inoculum coming from *in vitro* culture.

Conclusion

This work indicates that there are more sources of inoculum in coffee plantations than those normally expected. It is important to control this inoculum by applying a selective management of weeds, using less susceptible shade trees, and controlling isolated Catimors within Caturra plantations, particularly in localities with favorable conditions for the pathogen.

References

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