



ISBN 978-85-66836-16-5

Fusarium incarnatum-equiseti SPECIES COMPLEX ISOLATED FROM SOUTHERN BRAZILIAN RICE¹ / Espécies do complexo *Fusarium incarnatum-equiseti* isoladas de arroz do sul do Brasil. C. F. AVILA²; L. B. GOMES³; G. M. MOREIRA²; L. H. PFENNING³; E. M. DEL PONTE². ²Departamento de Fitopatologia, Universidade Federal de Viçosa, 36570-900, Viçosa, MG, Brazil / ³Departamento de Fitopatologia, Universidade Federal de Lavras, 37200-000, Lavras, MG, Brazil. E-mail: moreira.glaucia@gmail.com

Fusarium infect and colonize rice grains, and some species produce dangerous mycotoxins that accumulate in the kernels. A survey was conducted in Southern Brazil from 2009 to 2012 and, among several *Fusarium* species, a dozen isolates were assigned to the *F. incarnatum-equiseti* species complex (FIESC) based on morphology. The objectives were to identify phylogenetic lineages based on molecular phylogeny, evaluate morphological characters, and determine trichothecene mycotoxin genotypes based on presence of the Tri5 gene. Sequences of the EF1- α gene were aligned and subjected to maximum parsimony, maximum likelihood, and Bayesian Inference. Microscopic examination was conducted from cultures grown on SNA at 25°C/photoperiod for 7 days. Growth rate and colony pigmentation were evaluated on PDA at 25°C/dark for 3 and 14 days, respectively. The presence of Tri5 was detected by PCR. Strains grouped in four phylogenetic lineages: FIESC 4 (*F. lacertarum*), 20, 24, 26. Two isolates remained as single lineages in phylogenetic tree: 12AR016 close to FIESC 6 and 12AR099 close to FIESC 7 and 30. The strain 12AR101 grouped with FIESC 23, but without statistical support. No differences in mycelia growth rate were found among lineages (4–5 cm diameter on average). Colony pigmentation was initially white, becoming beige (7 isolates), brown (2 isolates), or orange (3 isolates) with age. Orange sporodochia were produced. Macroconidia were relatively slender, with a well-developed foot cell, 3–5 septate, apical cell curved or long (FIESC 4). Microconidia were observed in 12AR016, FIESC 4, 26. The genetic ability for producing trichothecenes were found for 12AR016 and lineages FIESC 4, 23, 24. The production of trichothecenes in both in vitro and in vivo assays should be confirmed by chemical methods in order to understand whether FIESC poses a threat to food safety and contributes to trichothecene accumulation in rice.

Key words: Molecular phylogeny; Mycotoxin; *Oryza sativa*; Trichothecenes.

¹ Grant information: CNPq and FAPEMIG.