A NEW SPECIES OF *FISTULIFERA*

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Fistulifera saprophila Lange-Bertalot et Bonik is a common taxon in strongly eutrophic waters in Europe and North America. It is completely hyaline in the light microscope, with a reported striae range of 48-81 striae in 10 µm. The taxon has been a candidate species for algal biofuels since the early work done in the 1980's in the Aquatic Species Program at the Solar Energy Research Institute. A number of strains of *F. saprophila* were studied at that time from lentic inland saline waters in the desert southwest. Recently, we have been working on an algal biofuels program, and have isolated several strains of *F. saprophila* from freshwater rivers, which are also some of our best performing strains. An examination of the fine structure of these diverse populations shows that there are almost certainly two species in the *F. saprophila* complex. Our freshwater strains have only 50 striae in 10 µm in the center, with 60 striae in 10 µm near the ends. The saline strains, which grow best at 10 mS/cm conductivity (~1/3 seawater), can tolerate up to 60 mS/cm conductivity. Saline strains have 75-90 striae in 10 µm. Given the clear morphological and physiological differences in these strains, we conclude that two species are currently encompassed by *F. saprophila*, and this will necessitate description of a new species for the saline populations.

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