Transfer of genes and translocations from Neurospora crassa to N. tetrasperma

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Abstract
It is difficult to obtain progeny when N. crassa and N. tetrasperma are intercrossed directly. Metzenberg and Ahlgren (1969 Neurospora Newsl. 15:9-10; 1973 Can. J. Genet. Cytol. 15:571-576) developed a transfer kit of interspecific hybrids which they used for bridging-crosses that enabled them to move the mating type genes from N. tetrasperma into N. crassa. I have recently been concerned with introgressing mutant genes and translocations from N. crassa into N. tetrasperma, and have found their strain C4,T4 a (FGSC 1778) extremely useful for the initial cross, and more fertile than other members of the kit.

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A single large cross-tube usually produces enough ascospores to provide progeny for initiating a series of recurrent backcrosses to N. tetrasperma wild types (85 A or a; FGSC 1270, 1271) or to N. tetrasperma strains containing the Eight-spore gene (E A or E a; FGSC 5897, 5901).

Most ascospores are homokaryotic in the initial cross. Homokaryotic progeny are obtained in successive generations by isolating small ascospores. A majority of ascospores are homokaryotic in crosses heterozygous for E. Small, homokaryotic ascospores can also be obtained as infrequent exceptions from crosses with wild type N. tetrasperma, where they occur even in the absence of E.