

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. Metzberg 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*.