

following: ascospore viability, 30-50%; normal colony size, 50% of which 30% were slow growing and reduced aerial frequency. Among the residual 20% normals, 23% were female sterile. Finally, of the 15% normal female fertile, only 10% were homogeneous with regard to colony phenotype. The remainder segregated vegetatively for a cytoplasmic maternally-inherited factor controlling colony phenotype. Thus, for our purposes and by our criteria, less than 1% of the F-1 population were "clean" wild type!

In other experiments, the survivors from aged "unclean" wild-type conidial populations were examined. Ageing was on a slant at 10° for 30 mo, on slants at 30° 100% rel. hum. for days to weeks, and on silica gel for 7 yr at 10°. The results indicate that ageing leads to the natural selection of spontaneous variants with abnormal colony phenotype. Such variants appear to be cytoplasmically-inherited and, upon extreme ageing, constitute 100% of the population.

I am inclined to believe that ageing, even on silica gel, by way of natural selection and mutation leads to a severe distortion of the genotype. Henceforth, we plan to maintain our clean genetically-defined stocks at liquid nitrogen temperature rather than on silica gel.

I would appreciate hearing about any of your observations that may be relevant to this problem.

Sincerely,



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KDM:ds

cc: Dr. David D. Perkins
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