Fungal Genetics Reports

Volume 7 Article 19

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Recommended Citation

Weijer, J. (1965) "Method for in vivo observation of karyokinesis of the somatic nucleus of Neurospora and Gelasinospora species," *Fungal Genetics Reports*: Vol. 7, Article 19. https://doi.org/10.4148/1941-4765.2128

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Abstract
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Thin depression slides 75 x 25 mm. with a well 18 mm. in diameter were used. Sufficient liquid paraffin was transferred to the well to fill the depression. A small drop of minimal Vogel's medium (either half strength or full strength) was placed on a 24 x 50 mm., No. 1, cover slip. To this was added a very small inoculum of mycelial growth from a wild type aconidial or macroconidial strain of *Neurospora crassa* or a wild type strain of *Gelasinospora tetrasperma*. The cover slip was then inverted over the paraffin on the depression slide. Air bubbles were avoided (as far as possible) by adjusting the amount of paraffin in the well. The slides were incubated at 25°C.

Observations and microphotographs were made with a Leitz Ortholux II microscope with phase-contrast optics and a Leitz 35 mm. automatic camera. The light source was a Leitz Xenon lamp. The Leitz microblitz flash attachment was used as a light source for photographing mitotic structures *in vivo*. Cinematography was carried out with a H16 Bolex camera loaded with Super Anscochrome (PNI Type 225) color film with the xenon lamp as a light source.

It is most difficult to study mycelial nuclei microscopically because of their minute size and because of the nature of the hypha itself. The chitinous wall acts as a lens and distorts the nuclei except in a very few focal planes. Continuous observation of one particular nucleus is impossible, due to the rapid streaming of the cytoplasm and vacuolization of the hyphae during growth. - - - Department of Genetics, University of Alberta, Edmonton, Alberta, Canada.