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Conidial harvest from solid media using fiberglass screening.

Neurospora conidia can be harvested from agar cultures by scraping the agar surface with a spatula. This may result in the inadvertant collection of small amounts of agar. When agar contamination must be avoided--for instance, when uptake of a supplement from the agar into Neurospora is being measured--an overlay of sterile dialysis tubing permits nutrients and supplement to diffuse from the medium to the mycelium, and allows easy harvest of mycelia and conidia from the surface of the dialysis sheet (Brody and Harris, 1973 Science 180: 498-500). For nondiffusible supplements, the problem becomes more difficult. For example, to aid Neurospora in incorporating long-chain fatty acid supplements, a gridwork of holes can be Punched into the dialysis sheet (Mattern and Brody, 1979 J. Bacteriol. 139: 977-983). Whether this is done by a polymer-held array of pins, an unthreaded sewing machine, or the toothed wheel of a dressmaker's pattern tracer, the procedure is tedious and labor-intensive.

We have tried several commercial screening materials as possible alternatives. Mosquito netting was found to be too flexible, and metal window screening too rigid. However, fiberglass window screening works quite well. It is widely available, inexpensive, sterilizable by autoclaving or by ethanol soaking, and can be cut with scissors to overlay any standard growth container. Furthermore, it is easily cleaned and can be reused. Harvesting the surface mat with tweezers removes conidia easily without removing the agar beneath the screen. Alternatively, the entire screen can be lifted from the medium, if traces of agar adhering to the bottom can be tolerated. Screening is not recommended for harvesting thin, unconidiating mycelia, which largely stay in the screening gaps.

To show the utility of this technique, we have measured the fatty acid profile of our standard strain (bd csp) supplemented with eicosanoic acid (20:0) as a 1.0 mM suspension in agar. Fatty acid esters of total lipids were obtained by acidic methanolysis of Neurospora harvested from a banding (conidiating) region and were analyzed by gas chromatography; negligible uptake was expected, (Mattern and Brody, ibid.). Indeed, analysis of material harvested from above the screening showed no detectable 20:0. A section of screening was then extracted along with its growth of Neurospora. Although the extraction solvent used apparently leached imourities from the fiberglass, only 0.04% of the fatty acid profile consisted of 20:0. Such small contamination from direct contact-with-the supplemented agar might be acceptable for many applications. (Supported by National Institute of Health Grant GM32572.) - - - Chemistry Department, University of Mississippi, University, MS 38677.