McCracken, D. A., P. J. Varkey, and W. M. Rutherford.

Amylose in Neurospora.

Neurospora is known to contain glycogen, but no reports indicate the presence of amylose (linear starch) even though Wescodyne stains the mycelia blue-black. Since Wescodyne contains iodine and a blue-black response with iodine is a positive test for starch, we stained Neurospora crassa with iodine solution (0.2% I_2-2.0% KI). As a blue-black stain resulted, we attempted to extract starch using 90% DMSO, 30% sodium salicylate, 1 N NaOH, or boiling water, all of which will dissolve starch from algae and higher plants. None of these solubilized Neurospora starch.

Earlier work (McCracken 1974 Plant Physiol. 54:414) showed the existence of an amylose precipitating factor in fungi. This factor has now been isolated from Neurospora and characterized (unpublished results). In our attempts to extract starch, we found that the blue-black staining material co-precipitated with the amylose precipitating factor. This factor binds only to amylose and not to amylopectin, glycogen, cellulose, dextran, inulin, or a variety of simple sugars. Moreover, in this case the iodine stain was blue. Thus we conclude that Neurospora does indeed contain starch in the form of amylose. Furthermore, since the blue stain is associated with cell walls, this amylose may be a cell wall component. • Department of Biological Sciences, Illinois state University, Normal, Illinois 61761.