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Eight heterothallic (P384, P385, P406, P407, P413, P419, P438, P439) and three homothallic strains (P388, P404, P435) of *Neurospora* were obtained from D. D. Perkins' Florida collection. Mycelial extracts from these strains were subjected to acrylamide and starch gel electrophoresis. Out of ten enzymes examined, electrophoretic variation was observed only for esterases. The sites of esterase activity were numbered from 1 to 4 in order of rate of movement towards the anode, with site 1 being the fastest.

Of the eight heterothallic strains, six (P384, P385, P406, P407, P413, P419) had esterase site 1 and two strains (P438, P439) had both esterase sites 1 and 2. Of the three homothallic strains, two (P388, P436) had esterase sites 3 and 4 and the third (P404) had esterase site 2. Amylase, aminopeptidase, o-glycerophosphate dehydrogenase, 6-phosphogluconate dehydrogenase and indophenol oxidase showed one site of activity. Acid phosphatase showed activity at two sites and lactate dehydrogenase, peroxidase and glucose-6-phosphate dehydrogenase showed activity at three sites for all the strains. The absence of electrophoretic variation for these enzymes suggests that selection may have been operating against enzyme variants resulting in stabilization of the enzyme genotype of isolated populations in nature.

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