

Further studies on the metabolic control of conidiation of *N.crassa*

V. G. DelVecchio

G. Turian

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Abstract

Metabolic control of conidiation

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the mycelial (M-) culture. This prompted the speculation that M-cultures predominate in fermentative enzymes whereas C-cultures have much lower glycolytic activity. The utilization of various inhibitors of this anaerobic mute transformed M- into C-cultures.

In a current morphogenetic study, we noticed that the transformation of C into M could be brought about by the addition of 200 µg of thiamine to 1 liter of C-medium (Turian 1964 Nature 202: 1240). This conversion was accompanied by a three-fold elevation of ethanol dehydrogenase levels and more ethanol detected in the filtrate.

Foster and Goldman (1949 Chemical activities of fungi, p. 316. Academic Press) suggested that the addition of thiamine to cultures of Rhizopus nigricans forced the anaerobic breakdown of glucose and subsequently lessened its aerobic oxidation. This phenomenon centered upon the increased activity of pyruvate carboxylase due to the addition of thiamine. Thus the conversion of C to M by means of thiamine may involve the augmentation of glycolytic enzymes in the normally non-fermentative C-cultures.

— — — Laboratory of Microbiology, Institute of General Botany, University of Geneva, Geneva, Switzerland.

Weiss and Turian (1966 J. Gen. Microbiol., 44: 407) demonstrated that conidiogenic cultures (C-cultures) of wild type N. crassa, strain Lindegren A, possess lower levels of pyruvate decarboxylase and ethanol dehydrogenase than does the corresponding morphological form.