

## Origin of the “accelerated growth an lactose” (“AGL”) trait

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## Origin of the “accelerated growth an lactose” (“AGL”) trait

### Abstract

Origin of "AGL" trait

Bates, Wm. K. and D. O. Woodward. Origin of the "accelerated growth on lactose" ("AGL") trait.

In standing cultures with lactose as sole carbon source, *N. crassa* wild type STA4 grows well, but when subjected to rotary or reciprocal agitation in the same medium, STA4 yields only small amounts of mycelium. We have obtained an isolate from STA4 which, in contrast to the wild

type, grows well on lactose in either shaking or standing cultures. This growth characteristic will be designated "accelerated growth on lactose" ("AGL").

The isolate showing the "AGL" characteristic was obtained from u.v.-irradiated STA4 conidia which were plated on lactose + sorbose. The largest colonies on these plates were isolated, and preliminary growth studies led to further examination of the isolate designated L5. Growth studies were carried out in 200 ml of 1.5% lactose - Vogel's medium (lactose autoclaved separately from salts, then mixed after cooling) with an inoculum of  $5 \times 10^5$  conidia per ml. Standing cultures were grown in one liter Roux bottles at 30°C for four days. Shaking cultures were grown in 500 ml Erlenmeyer flasks at 30°C. These were allowed to germinate for 18 hours as standing cultures, then transferred to a rotary shaker for 4 days additional growth with agitation at 180 cycles per minute. Under these conditions the L5 isolate yields 1.4 grams dry weight in shaking cultures and 0.2-0.3 grams dry weight in standing cultures. STA4 consistently yields less than 0.02 grams in shaking cultures, but produces about 0.2 grams dry weight in standing cultures. If sucrose is substituted for lactose as sole carbon source, STA4 and L5 yield comparable growth in shaking cultures.

Vegetative transfers of the original L5 isolate showed differing morphological characteristics and these were assigned temporary letter designations. Thus, the isolate used in our previous studies (Bates, Hedman and Woodward 1967 J. Bacteriol. 93: 1631) and in the studies described above, has been called L5D. To avoid confusion, we are now adapting the following systematic designation: (isolate number)-L5-(mating type), so that the L5D isolate becomes 105-L5-A. In addition to the "AGL" trait, the 105-L5-A isolate grows much more rapidly on glycerol or on galactose in shaking cultures than does STA4. These characteristics, and related characteristics of isolates from crosses of 105-L5-A to wild type have been described in abstract form (Bates 1967 Genetics 56: 543).

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