TITLE: INNOVATIVE BEER FERMENTATIONS: ASSESSMENT OF GROWING PATTERNS OF NON-SACCHAROMYCES YEASTS IN DIFFERENT GROWTH MEDIA

AUTHORS: BASSO, R.F.; PORTUGAL, C.B.; DA CRUZ, S.H.

INSTITUTION: UNIVERSIDADE DE SÃO PAULO / ESCOLA SUPERIOR DE AGRICULTURA "LUIZ DE QUEIROZ" – USP/ESALQ (Av Pádua Dias, 11. Piracicaba – SP. CEP 13418-900) - BRAZIL.

ABSTRACT:

With the booming in the craft beer market worldwide, the search for new approaches to bring up distinctive products is gaining robustness. An approach that stands out in this context is the use of non-conventional yeasts in controlled beer fermentation processes, as sole inoculum, as well as in co-inoculations or successive inoculations with the well-known *Saccharomyces cerevisiae*. In order to have better outcomes in this scenario, the assimilation and growing patterns of those non-*Saccharomyces* yeasts in different substrates, especially beer wort, must be assessed so brewers can have a prediction of how the fermentation kinetic will be for each of those uncommon strains. Based on the aforementioned, this study aimed to assess the capacity of assimilation and growth pattern of one strain of *Dekkera anomala*, one *Torulaspora delbrueckii* and two *Saccharomyces cerevisiae*, using YPD, YPMalt and beer wort as growing media. The assay was performed on a microplate reader at 27°C with absorbance readings at 600 nm every one hour for 72 hours. A similar behavior was observed when comparing both strains of *S. cerevisiae* although different patterns could be noted in each of the three culture media. Regarding the non-*Saccharomyces* strains, different results were observed. *T. delbrueckii* showed a pattern close to that observed for *S. cerevisiae* in YPD and beer wort, whereas in YPMalt it behaved more like *D. anomala* with a long growth curve. *D. anomala* presented as the slowest growing yeast among those addressed in this study for all growth media, but it was the one that reached highest optical density though. Both non-conventional yeasts proved to be able to consume the carbon sources supplied and grow in beer wort pointing them as potential options to the development of distinctive and innovative beers.

KEYWORDS: *Torulaspora delbrueckii*; *Dekkera anomala*; Craft beer.

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