



## AROMA PRODUCTION FROM GALATOMYCES GEOTRICHUM

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**Introduction.** Different microorganisms were isolated from Mexico supply center. *Galactomyces geotrichum* is capable to degrade vegetables compounds like hemicellulose to produce a fruity aroma. Many of these compounds (aldehydes, alcohols, fatty acids, esters) are used in the food industry to give taste and aroma to different products [2]. This work is looking forward to establish *Galactomyces geotrichum* bests conditions to obtain the fruity aroma.

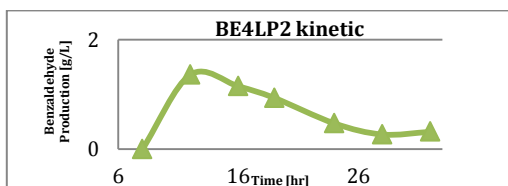
**Methods.** *Galactomyces geotrichum* strains were stored on an YPD agar at 4°C, transferred to a MOG medium (30 g/L glucose, 0.25 g/L MgSO<sub>4</sub>, 5 g/L tryptone) and incubated at 30°C and 120 rpm[1]. Thirty-milliliters samples from the medium pass through an Oasis cartridge where the fruity aroma compounds were concentrated. Ten milliliters of different solvents were incorporated to the medium in order to find the microorganism critical log P and prove another way to concentrate fruity aroma compounds. Volatile compounds were analyzed by gas chromatography.

**Results.** After 12 hours of incubation *Galactomyces geotrichum* emitted a fruity aroma. Gas chromatography showed the next results.

**Table 1.** Volatile compounds results showed by gas chromatography.

EA2	BE4LP2	P422
Butanoic-acid	Benzaldehyde	Benzaldehyde
4-ethoxi-3-anisaldehyde	4-ethoxi-3-anisaldehyde	4-ethoxi-3-anisaldehyde

The high commercial value of benzaldehyde makes it attractive for its study.



**Fig.1** Benzaldehyde production.

BE4LP2 strain showed a higher benzaldehyde concentration during the kinetic test.

Thirteen solvents with different log p were proved in the medium to determine the critical log p. The next table present the results obtained in the experiment (x= didn't grow, √=grow)

Solvent	Log P	Growth
4-heptanone	1.73	X
Hexanol	2.03	X
Heptanol	2.62	X
Cyclohexene	2.86	X
Cycloheptanone	3	X
Cyclohexane	3.44	X
Cyclooctene	4.45	X
Nonene	4.76	√
Dodecylbenzene	8.65	√
Silicon oil	-	√
Silicon + cyclohexene	-	√
Silicon + Hexane	-	√

**Table 2.** Microorganism's growth for different solvents.

The critical log P for *Galactomyces geotrichum* is between 4.45 and 4.76

**Conclusions.** *Galactomyces geotrichum* formed different fruity aroma compounds in a synthetic medium. The concentration of benzaldehyde obtained by Oasis cartridge approaches to the highest concentrations found in the literature. Oasis cartridge concentration route is classified like natural while solvent concentration route is not. Silicon is the better solvent for concentrate the benzaldehyde.

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### References.

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