PENICILLIUM GENUS AS AN ALTERNATIVE TO *MONASCUS* IN THE PRODUCTION OF FUNGAL PIGMENTS USED AS FOOD COLORING

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Final Degree Project

February 2022

OBJECTIVES:

- To evaluate the feasibility of use *Penicillium* as an **alternative** to *Monascus* for industrial production of pigments.
- To check if *Penicillium* produce *Monascus*-like azaphilones.
- To evaluate pigments **stability**.
- To determine the optimal methods and conditions for the process to obtain the **maximum yield** of azaphilones in *Penicillium* genera, in order to know how to **scale-up** the production.

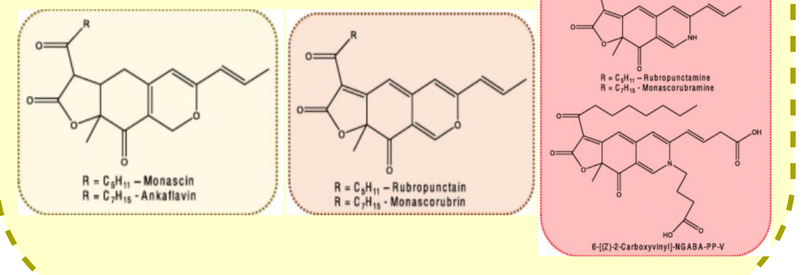
CHALLENGES FOR NEW PRODUCTORS:

1. Produce pigments without mycotoxins
2. High stability to food processing
3. High yields of pigments production

1 AZAFILONES PRODUCTION:

Monascus — Mycotoxin

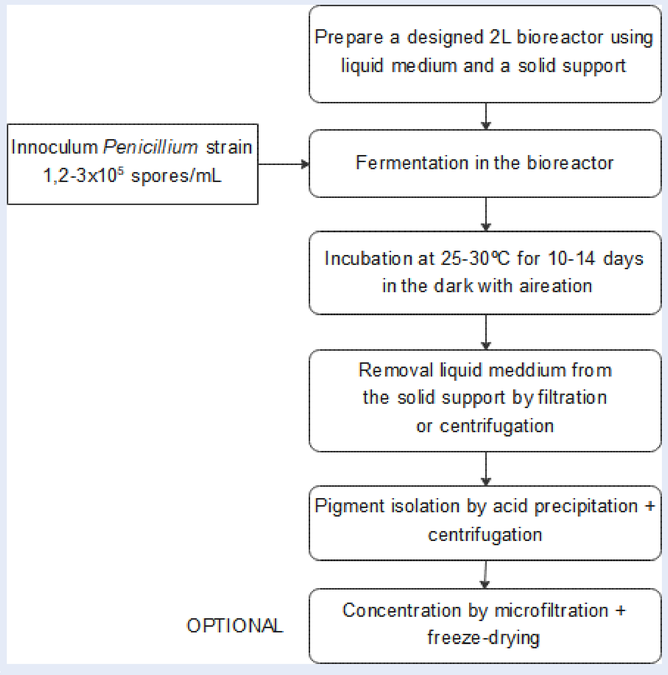
Penicillium



2 PIGMENT STABILITY:

- **Tª:** sterilization (120ºC): low pigment loss; pasteurization (60-90ºC): good stability
- **Light:** higher stability than Monascus-like pigments
- **pH:** 6-8 maximum; > 6 good; < 6 moderate

3 OPTIMAL PROCESS:



CONCLUSIONS:

- Certain *Penicillium* species are a good and safe alternative source of *Monascus*-like azaphilones.
- Good stability when submitted to food processing conditions proves they can be used as food coloring.
- Further studies about optimal conditions are needed to obtain higher yields and scale-up the pigments production.