

# Biotechnologické aplikácie v praxi

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LH

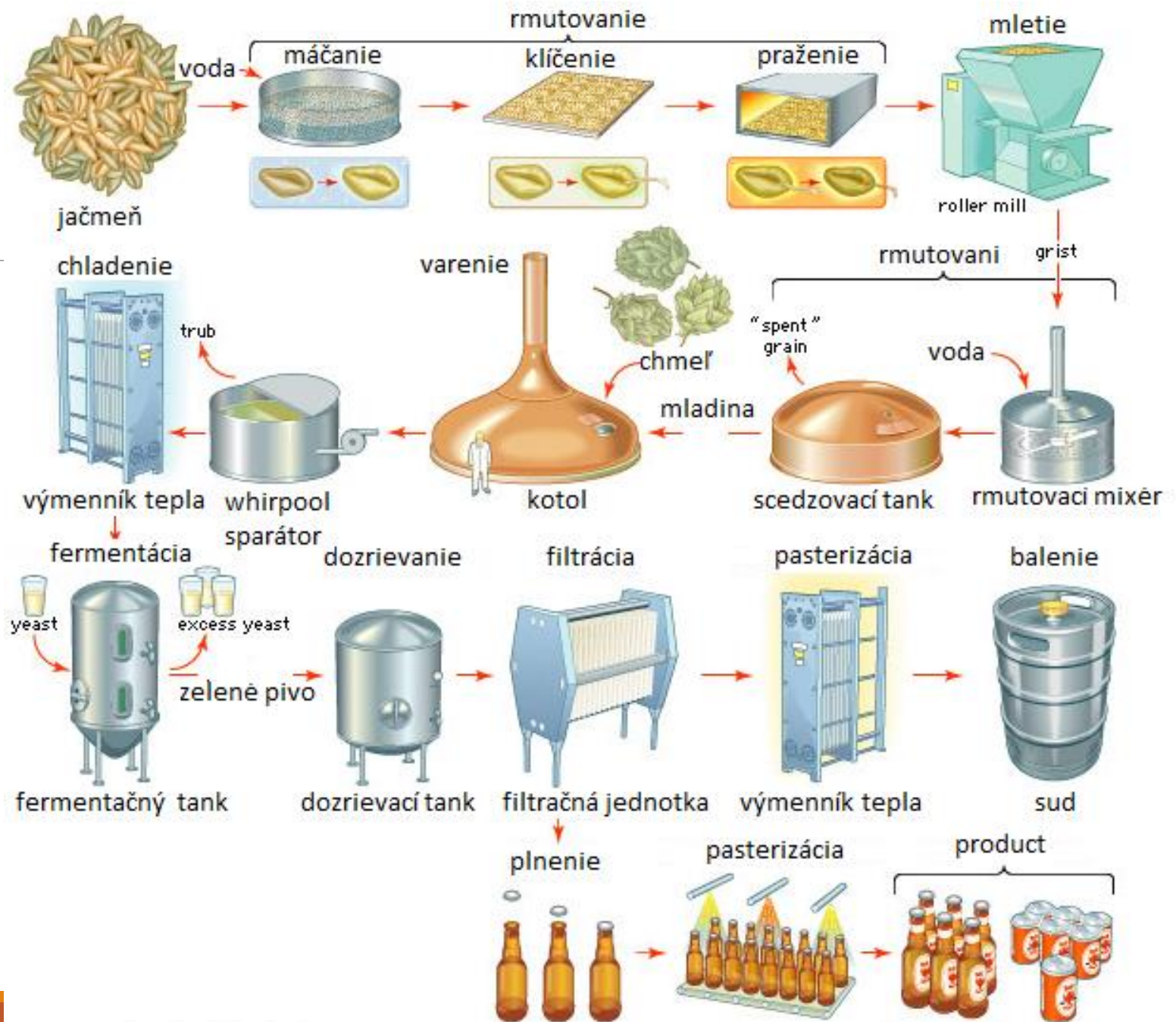


# Potravinárske biotechnológie

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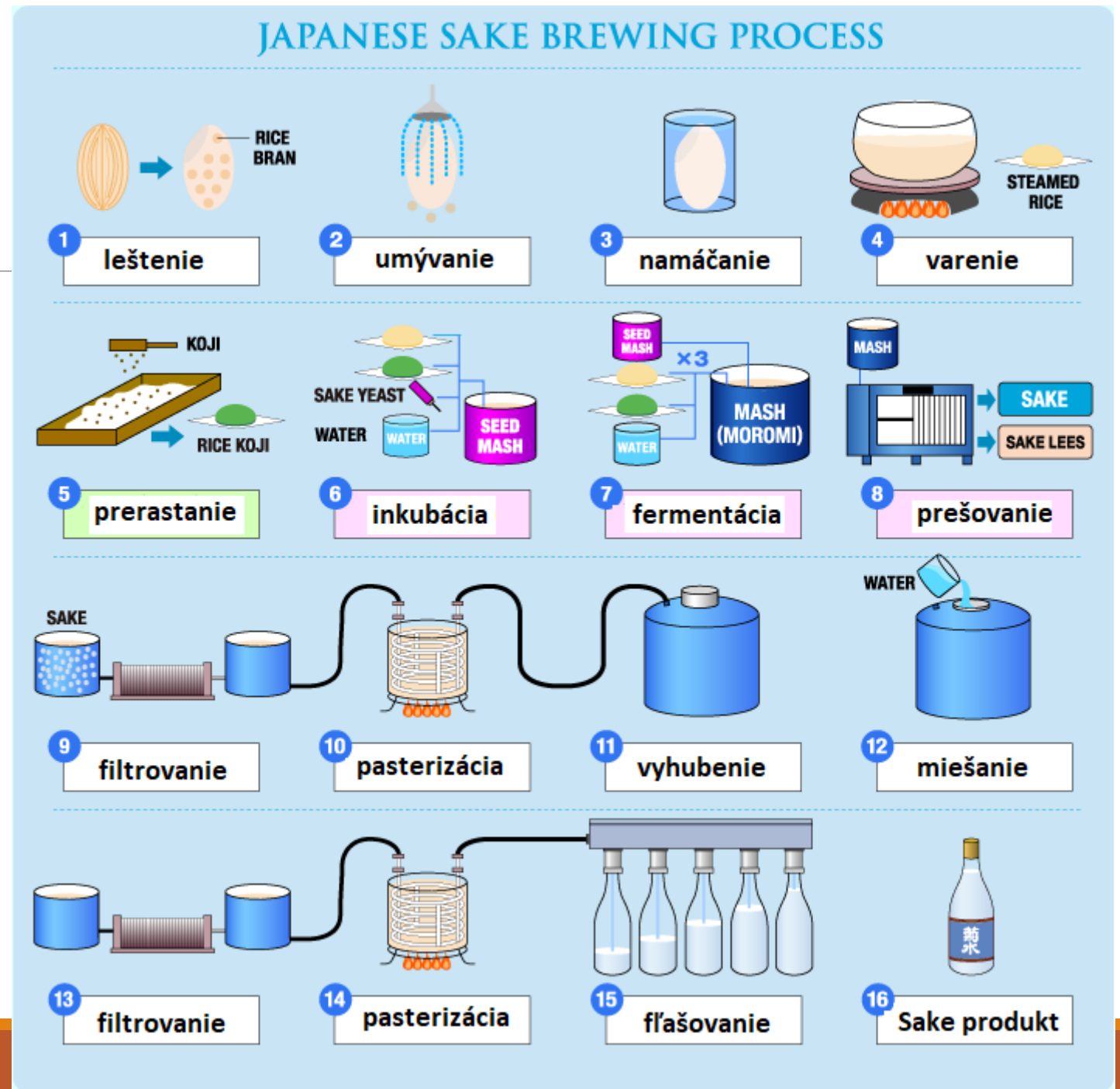
# Pivo



# Saké

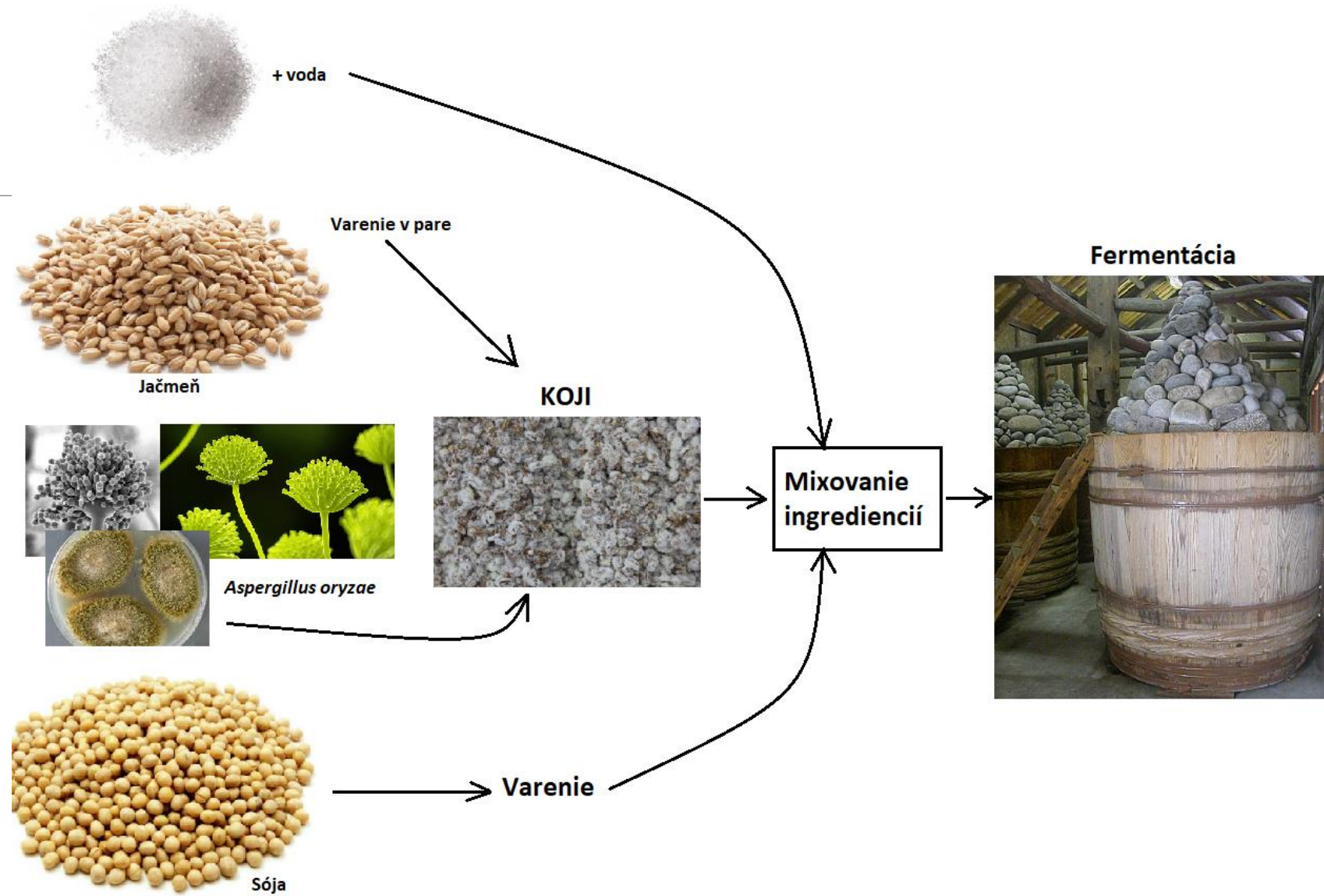
- *S. sake*

- kooperatívna fermentácia



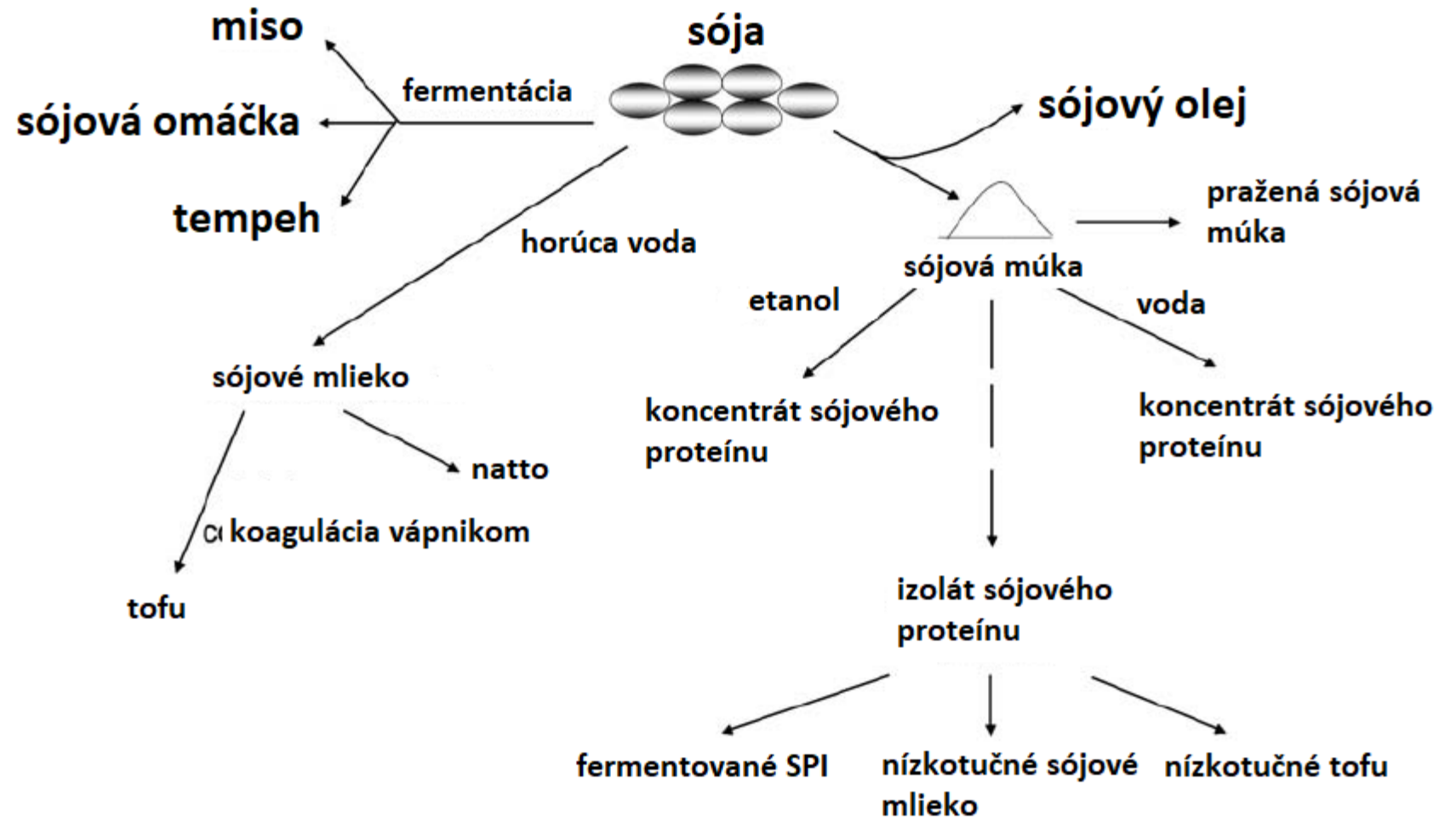
# Miso

- fermentácia aj niekoľko rokov
- *A. oryzae*
- jačmeň, ryža, sója
- niektoré druhy miso sa fermentujú aj s *S. cerevisiae* a laktobacilmy



# Sója

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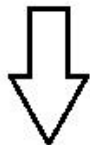


# Natto

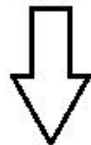
Sója



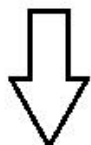
Umývanie a čistenie



Napučiavanie 12 - 20 hod



Varenie 6 hod

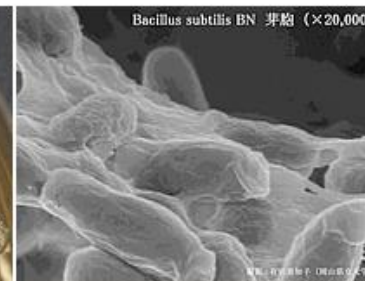


40 °C Chladenie



Uvarená, vychladená sója

*Bacillus subtilis* var. *natto*



aeróbna fermentácia 24 hod pri 40 °C



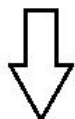
Natto



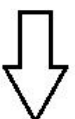
# Tempeh



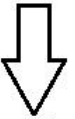
Umývanie a čistenie



Napučiavanie 12 - 20 hod



Varenie 6 hod

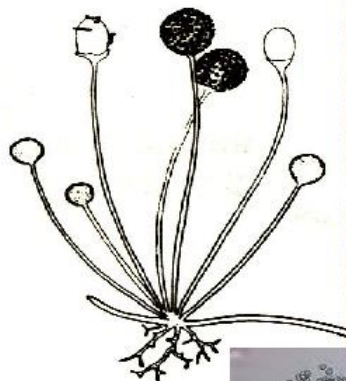


30 °C Chladenie



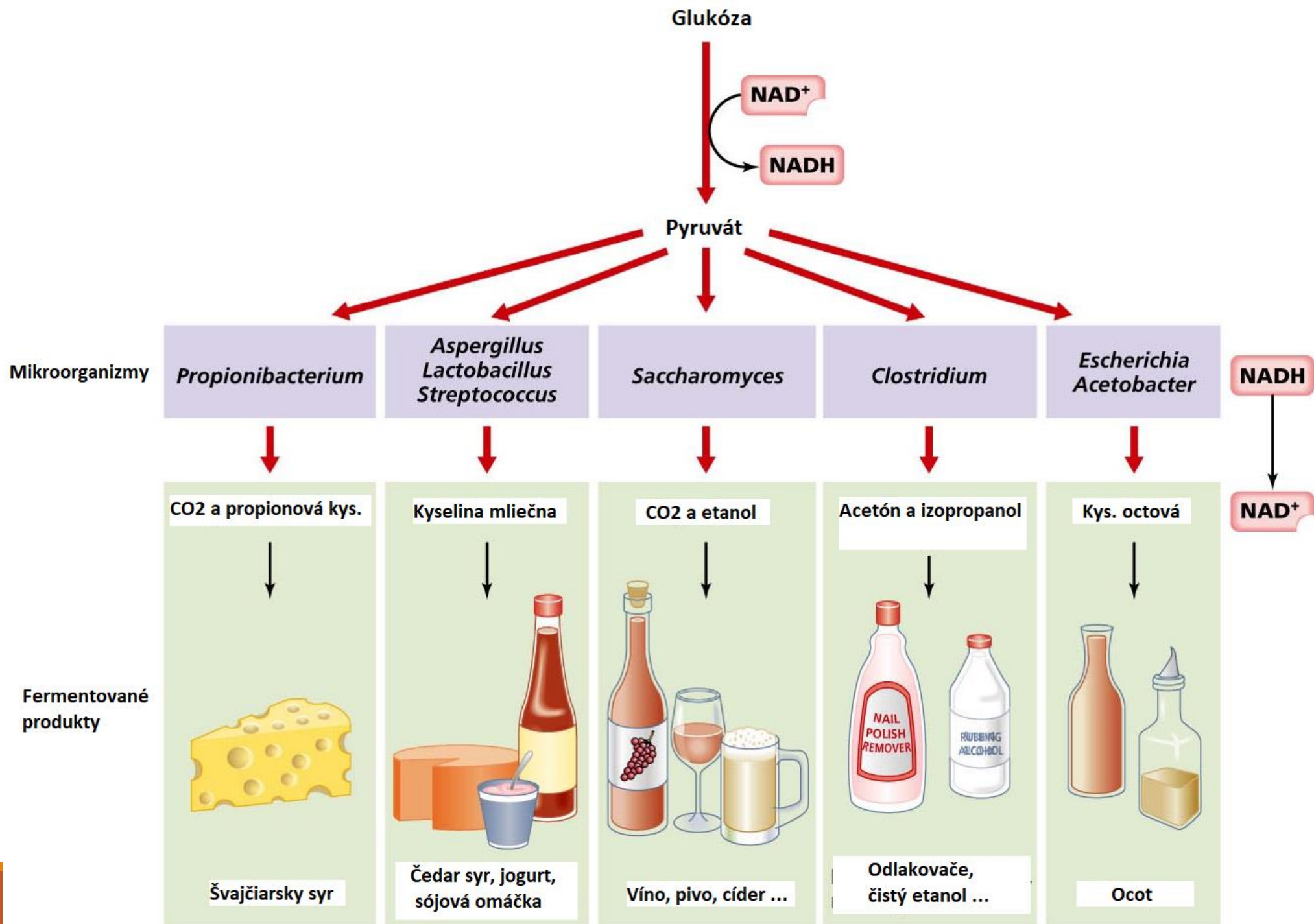
Uvarená, vychladená sója

*Rhizopus oligosporus*  
alebo  
*Rhizopus oryzae*



aeróbná fermentácia 24 - 36 hod pri 30 °C



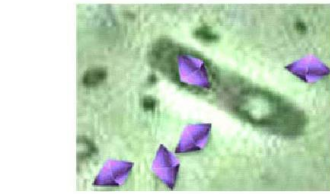


# AgroBioTechnologie

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# B. thuringiensis

*Bacillus thuringiensis* (Bt)



Kryštalická forma Bt toxínu

Rozpustenie

Aktivácia



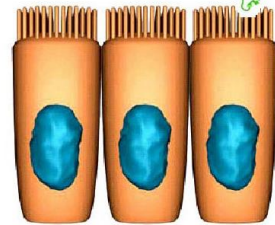
Bt kukurica

Bt bavlna

Požitie

Viazanie sa na receptor

Monomér toxínu



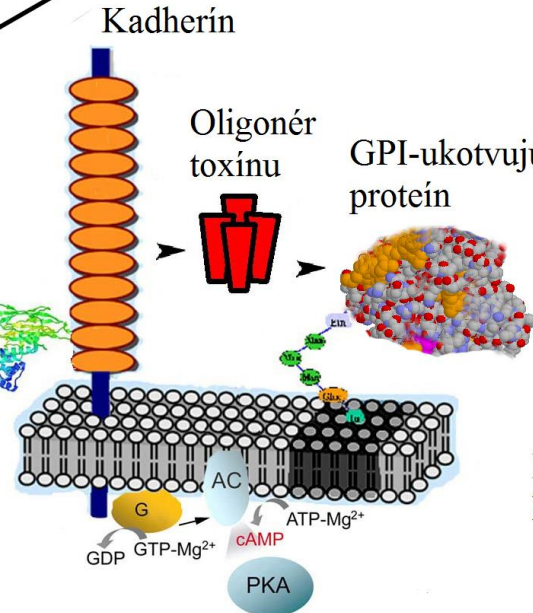
Bunky hmyzieho traktu

Kadherín

Oligonér toxínu

GPI-ukotvujúci proteín

Väzba na membránu



Póry v membráne vedú k osmotickej bunkovej lýze

Bunková smrť

Septikémia  
Smrť lariev