

# Development of innovative Amazake from Portuguese Chestnuts

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## Food consumption trends

Growing consumer interest in healthier and/or special consumption behaviours

- Curiosity for new diets - Food as a way for health
- Availability of new food and beverage brought by globalization

**Food industry:** redefinition of the relationship between food, nutrition, and health.

Development of Functional Foods, healthier and more diverse and flavourful foods.

Fermentation of pulses and crops:

- increases the soluble fraction and digestibility;
- decreases toxic compounds concentration;
- increases nutritional value and potential as **Functional Foods**.

Use of low caliber and fractured Portuguese chestnuts, with no commercial value, for development of different high quality fermented products.



## What is Amazake?

Fermented product traditionally made from rice, consumed in Japan since the ancient Nara period (710-794). Known as a superfood due to many health and beauty benefits.

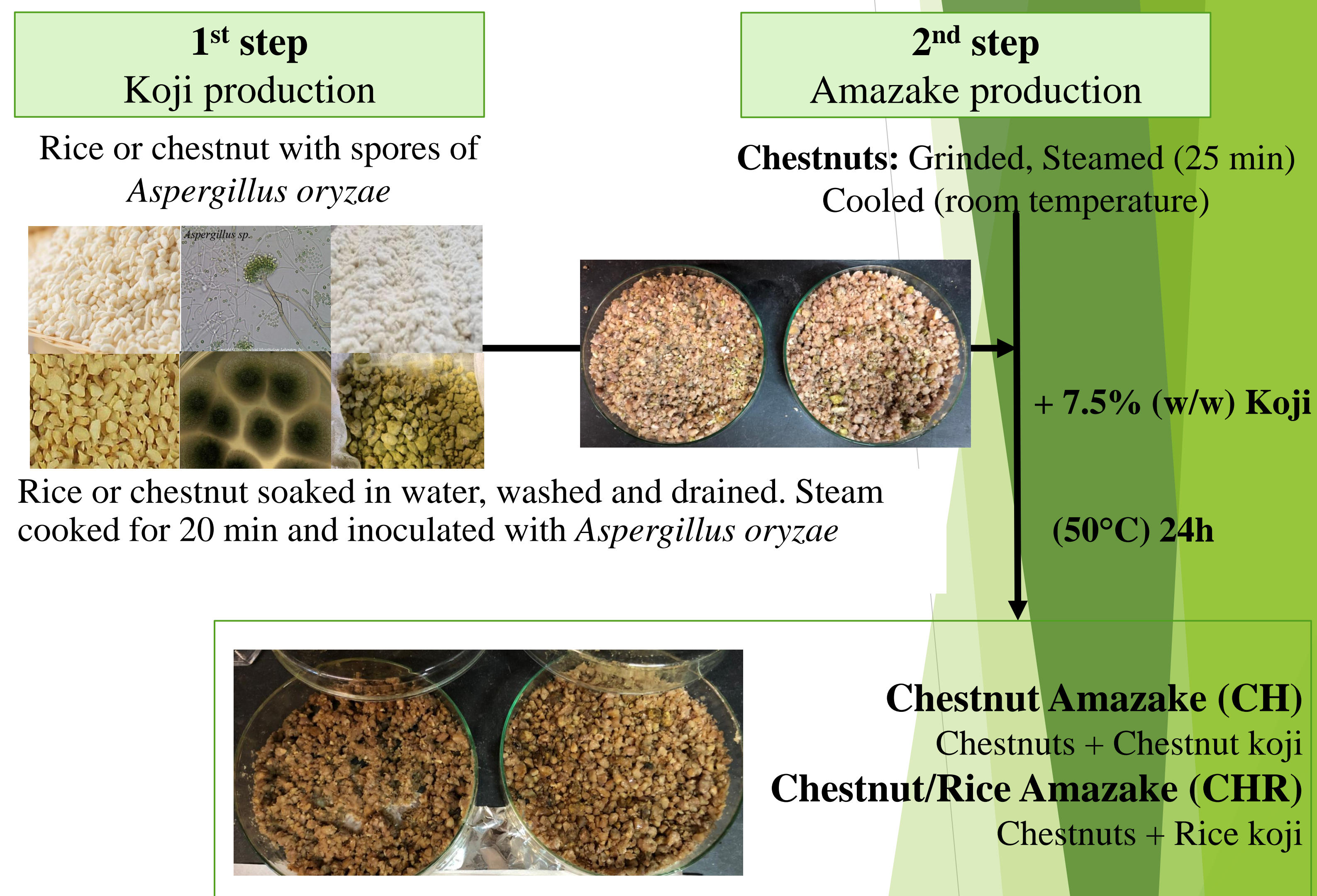
### Nutritional compounds

- Vitamin of B complex (B2, B5, B6, B9); Ferrulic acid; Cysteine; Biotin Aminoacids; Oligossacharides and glucose
- Digestive enzymes (amylases and proteases)
- Vegetable fiber

### Health/Beauty benefits

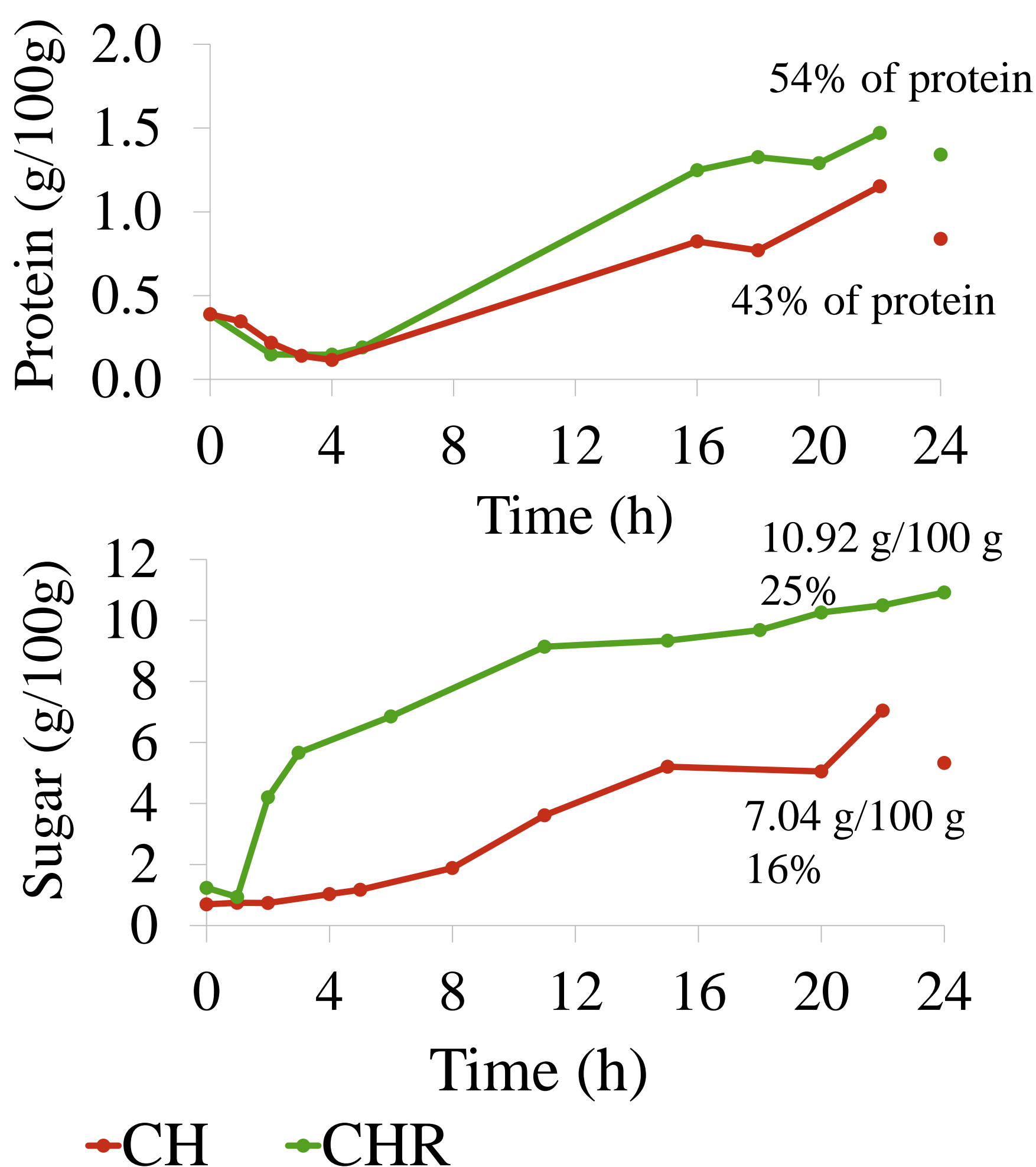
- Healthy skin, hair and nails; Nervous system (relives stress and depressive symptoms); Higher digestibility; Helps normalize liver function (effective hangover cure);
- Antioxidant properties;
- Source of energy and fiber; Good for weight loss;
- Strengths a weakened body.

## Chestnut Amazake production



## Amazake analysis:

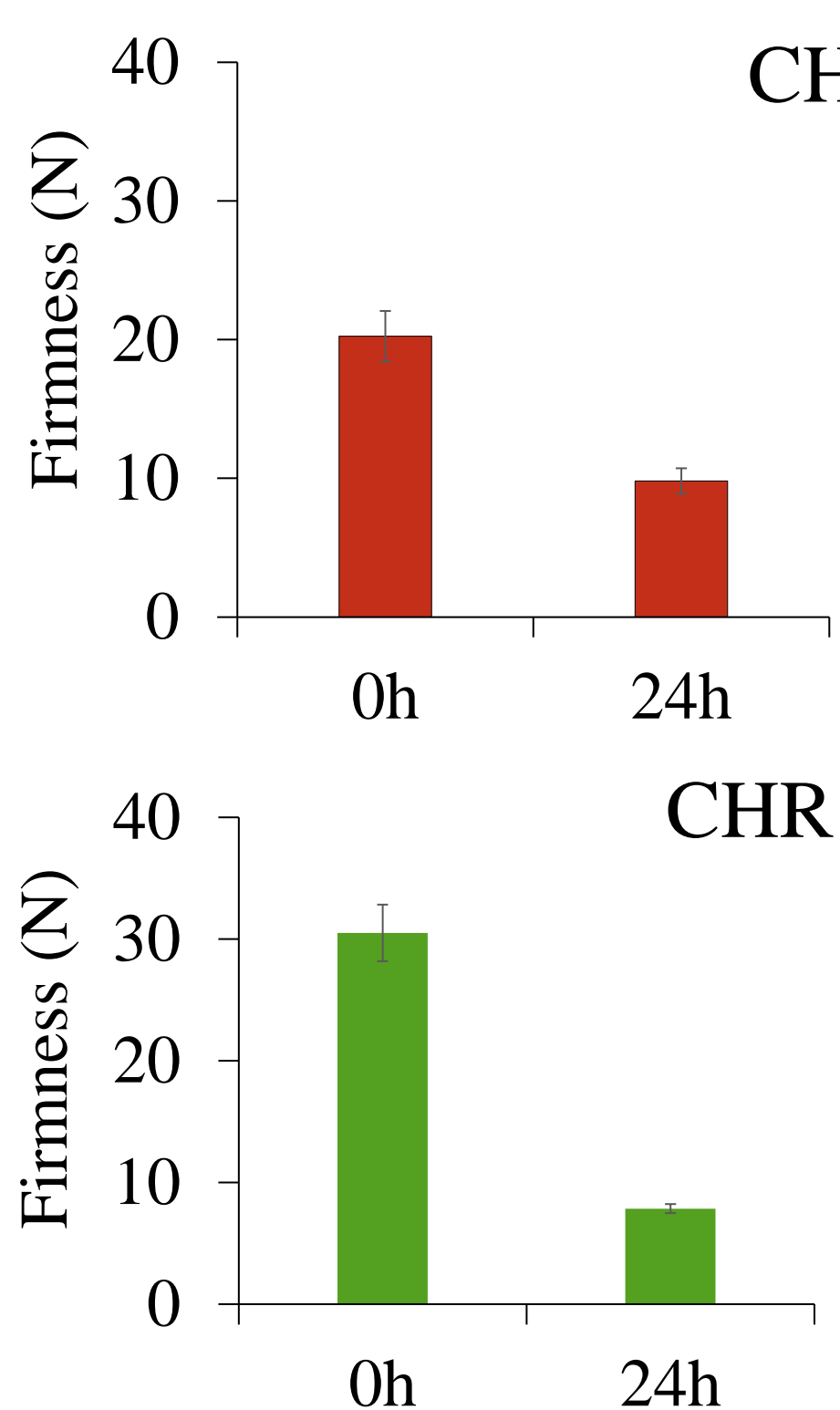
### Free sugar and protein



- Increase in free sugar and protein in CH and CHR.

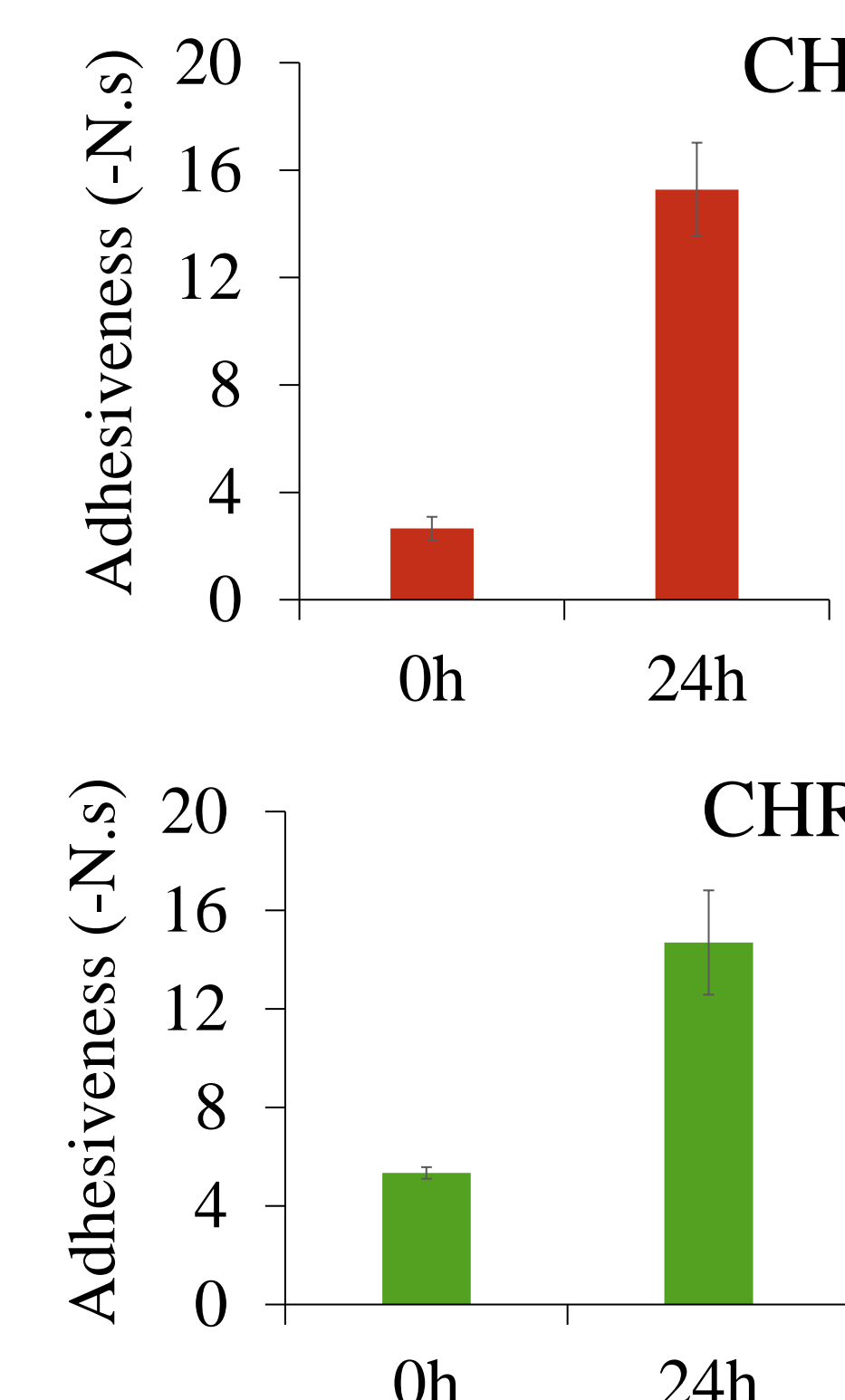
## Texture

### Firmness

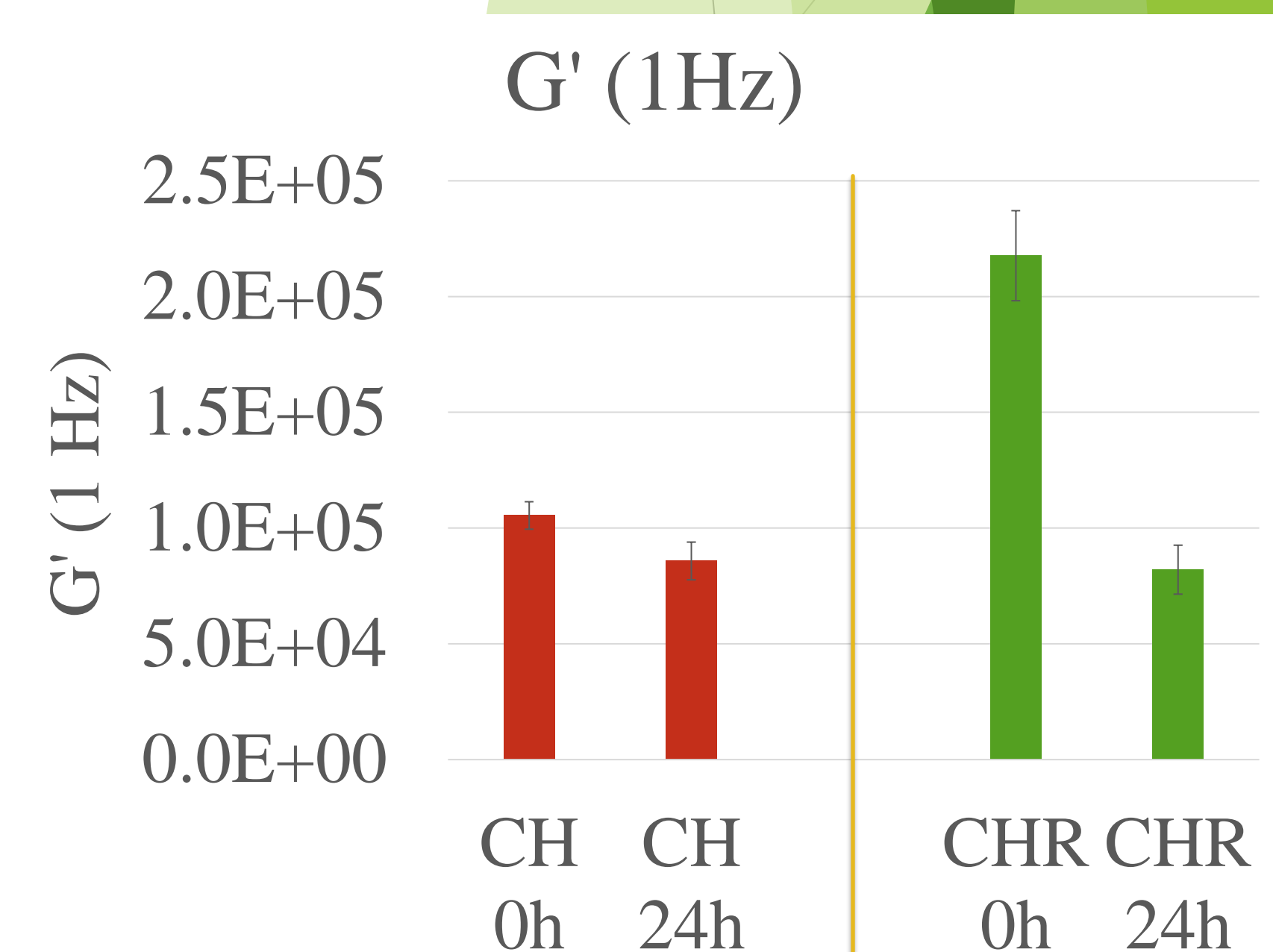


- Decrease in firmness in CH and CHR, higher in CHR;
- Increase in adhesiveness after 24h fermentation, higher for CH;

### Adhesiveness



## SAOS (mechanical spectra)



- Slight changes in viscoelastic function in CH;
- Evident changes in CHR viscoelastic function with reduction in the degree of structure ( $\downarrow G'$  and  $G''$ ) – Effect of hydrolytic enzymes;
- CHR and CH with similar structured system after 24h.

Final CH and CHR Amazake products with similar characteristics.