# Plant-based Fermentation Foods and Resistant Starch: A Synthesis Research on their Impact on Public Health

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**Introduction**:Plant-based fermentation foods are rich sources of beneficial microorganisms, fiber, and resistant starch, which have been associated with numerous health benefits (Figure 1). Resistant starch is a type of dietary fiber that is not broken down by enzymes in the small intestine and thus passes to the large intestine where it is fermented by gut microbiota.
Several studies have shown that resistant starch can improve insulin sensitivity, reduce inflammation, and promote gut health. However, the impact of plant-based fermentation foods that are high in resistant starch on public health has not been extensively studied.

**The aim of research** :
What is the impact of plant-based fermentation foods high in resistant starch on public health?

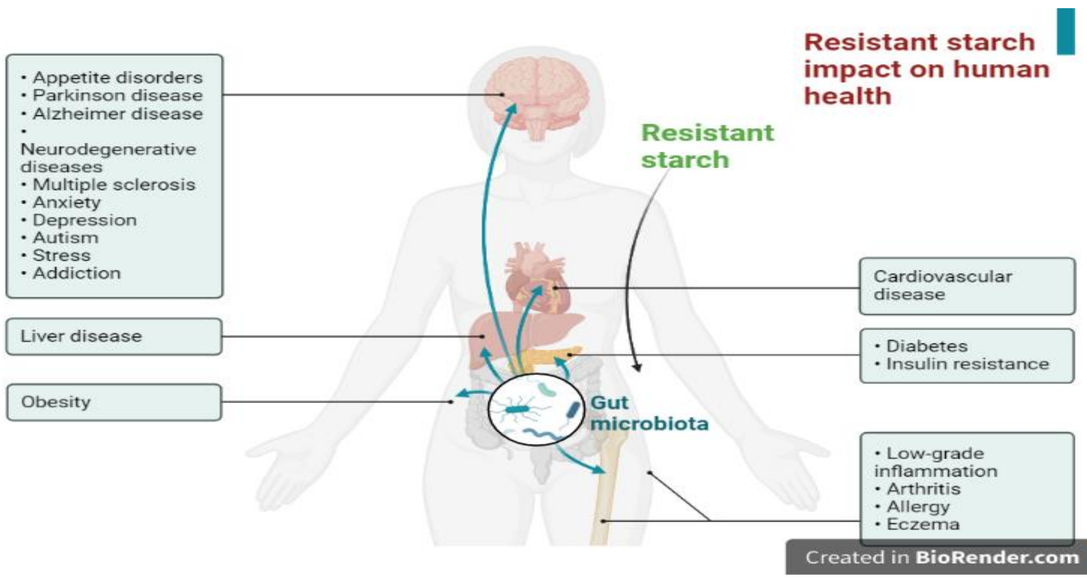


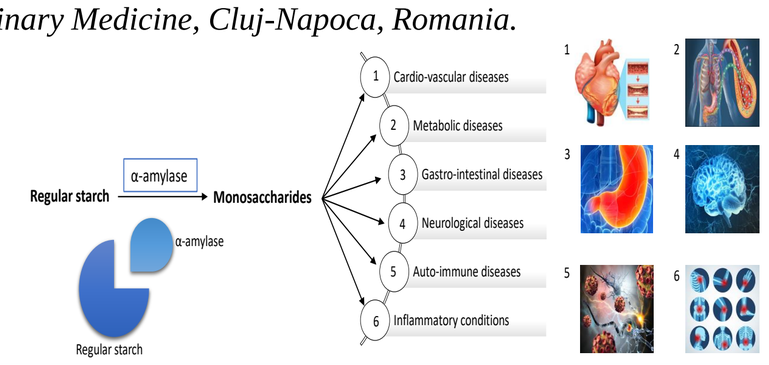

Fig. 1 Health benefits of resistant starch

**The methods of the research:**

**Literature search:** A comprehensive search will be conducted in electronic databases including PubMed, Scopus, and Web of Science to identify relevant studies published between 2000 and 2023. The following keywords will be used: plant-based, fermentation, resistant starch, gut microbiota, inflammation, insulin sensitivity, and health.
**Study selection:** Studies will be screened based on their title and abstract, and full-text articles will be retrieved for further evaluation. Only studies that meet the inclusion criteria will be included in the synthesis research.
**Data extraction:** Data will be extracted from the selected studies, including study design, sample size, intervention, outcome measures, and main findings.
**Data analysis:** The extracted data will be synthesized and analyzed qualitatively to identify the impact of plant-based fermentation foods high in resistant starch on public health.

## Expected outcomes

The synthesis research is expected to provide insights into the impact of plant-based fermentation foods high in resistant starch on public health as illustrated in figure 2. The findings will be useful for researchers, healthcare professionals, and policymakers to promote the consumption of these foods and develop public health interventions to improve health outcomes.



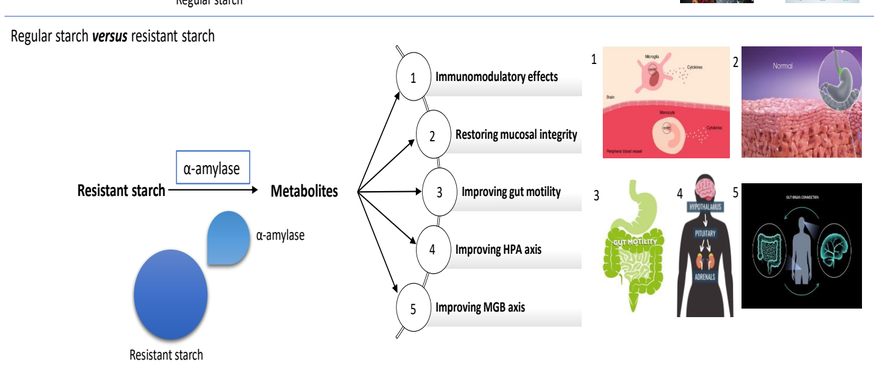




Fig. 2 Resistant starch *versus*. regular starch in the gastrointestinal tract and systemic outcomes

**Objectives:**To review the literature on plant-based fermentation foods and their impact on resistant starch content and public health.
To identify the types of plant-based fermentation foods that are high in resistant starch (Figure 3) and their potential health benefits.
To evaluate the impact of plant-based fermentation foods high in resistant starch on gut microbiota, inflammation, insulin sensitivity, and other health outcomes.
To provide recommendations for future research and public health interventions.

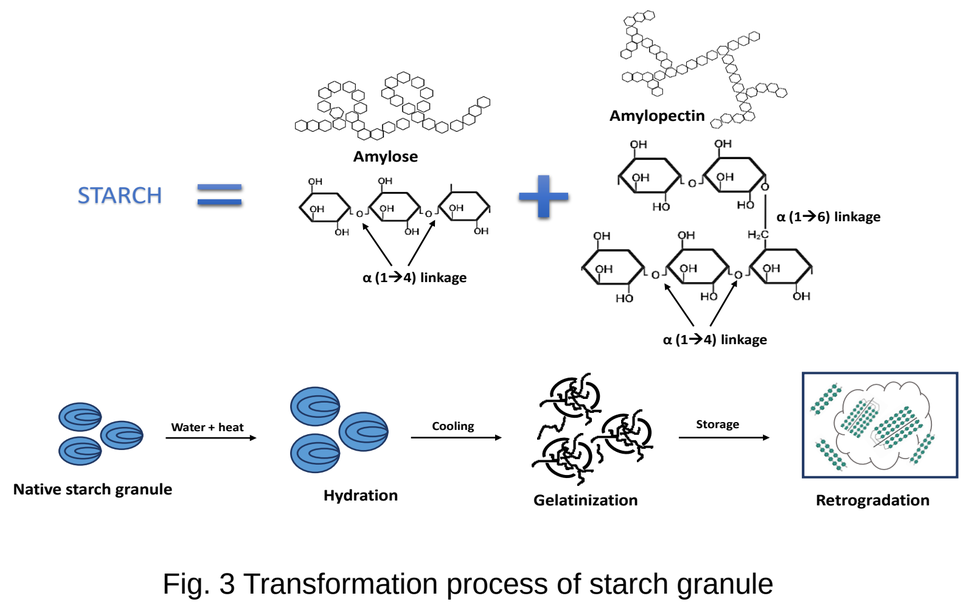



Fig. 3 Transformation process of starch granule

## Recommendations

Based on the findings, recommendations will be provided for future research and public health interventions.

## References

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