

GLYCAEMIC INDEX, GLYCAEMIC LOAD AND NUTRITIONAL VALUE OF ETHIOPIAN INDIGENOUS FOOD

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Summary

Ethiopia had a plenty of indigenous foods that peoples from deferent corners can use as staple or co-staple food. Apart from this, 50% of human energy demand of the world people is supplied by five cereals- rice, wheat, sorghum, maize *and* millets. The excessive utilization of these cereals is great potential cause of genetic losses and difficulty in bridging future agricultural demands. Having these in mind, the innate objective of this study will be investigating Glycemic index Glycemic load and Nutritional value of Ethiopian indigenous Food; -white and brown Teff injera, Tihilo, Anchote, Kocho bread and Bulla porridge on mice. Recent Teff, Barley, Kocho, Bulla and Anchote verity collect from Kulumsa Agricultural research center, Bishoftu Agricultural Research Center and Hawassa University respectively. Collected cereals, Roots and tubers will be washed by distilled water to prevent any contamination and impurity. Then the test foods will be prepare strictly by following traditional method and dried by oven. The dried foods will be milled by stainless steel at sieve size of 500µm. Finally powders will be packed by polyethylene bags and keeping at desiccators to prevent moisture loss until the experimentation.

The nutritional value including macro nutrient, macro minerals, micro minerals, Vitamins and heavy metal toxicity of test foods will analyzed according to AOAC methods. To determine the Glycemic index of test food a randomized control trial research design will employ on seven group male mice with 12 weeks old. Oral glucose tolerance test will be conduct according to the guidelines and considerations for Metabolic Tolerance Tests in Mice. Six groups of mice consisting of seven mice for each test food and one control group will be organize for experimentation. 1.5 g/kg body weight test food with 1 ml water will be administered by OG. To this end the blood glucose will measure at 0, 30, 60, 90, 120 min, by removing 1 mm tissue quickly from the tail by GlucoSure® Plus Blood Glucose Meter (APEX BIOTECHNOLOGY CORP., Hsinchu, Taiwan, R.O.C.). Finally, glycemic load can be calculated by multiplying the GI by amount of available carbohydrate.

To assure the research procedure ethical clearance will be obtain from Hawassa University Collage of Health Science, research review board. On the other hand to maintain the quality of data, each activity from raw material collection, preparation, and intervention administration will be recorded by video and reviewed by expert team consisting researcher and laboratory technicians at each stage.

Registration details	
Status of the study	Registered
Date of registration	2024-04-10
Notified date of accessibility	2027-04-01
DOI	10.17590/asr.0000347
Planned start of the study	2024-04-15
Planned end of the study	2024-04-30
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