2. PRESENT STUDY

Various fermented foods are popularly prepared in India and other parts of the world but very few pulse-based products exist currently in the market, fermented preparation using lactobacilli are mostly prepared from milk, vegetables, fruits, sourdough (alone pulses), cereals (mixture of cereals with pulses). This study was undertaken for developing fermented pulse-based food product using lactobacilli; hence, pulse split beans flour were used as a source for the isolation of lactobacilli to maintain their functionality, growth characteristics and activity during food processing. These lactobacilli act as a carrier in pulses and serves food of high calorie, improved functionality and sensory qualities. Very few reports were available till date (april, 2021) on isolating lactobacilli as possible candidates from pulse-based fermented foods. Moreover, a recent study by Lavanya et al., (2021) reported isolation of *Lpb. plantarum* from fermented *Jangri*, a delicious flower shaped Indian sweet prepared by deep frying of batter. *Jangri* batter is made up of black gram (without skin) after soaking in water for 3–4 h [39]. Studies on isolation of lactobacilli from fermented pigeon pea, faba bean, red lentils, and green gram are not done so far. However, reports are available with lactobacilli as a starter culture for fermentation of soy products and fermentation of pigeon pea using combination of *Bacillus* and lactobacilli but not with other pulses. Studies on α- galactosidase from lactobacilli during fermentation of pulses will enable in understanding feasibility of decrease in α- galactosides in pulses, that are believed to cause disturbance in humans after eating. There is report available containing presence of intracellular enzyme from *Lev. brevis* [40] but to the best of my knowledge no reports still exist claiming the presence of extracellular α-gal enzyme from *Lev. brevis*. Fermentation leads to decrease in other anti-nutritional factors.

Objectives of the study

1. Isolation, identification and characterization of *Lactobacillus* from fermented pulses flour.
2. Study of change in carbohydrates and α- galactosides in fermented pulse beans and study of α- galactosidase from selected *Lactobacillus*.
3. Study of change in other anti-nutritional factors during fermentation of pulses for nutritional benefits.