EVALUATION OF THE PREBIOTIC EFFECT OF LOCAL YAM VARIETIES GROWN IN SRI LANKA

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Probiotics, Prebiotics and Synbiotics are considered to be functional foods which provide beneficial health effects for the consumer. Locally available yam varieties are known to possess high nutritional and medicinal values and they are rich in soluble dietary fiber. This study evaluated the prebiotic effect of *Amorp hop hallus campanulatus* (kidharan), *Maranta arundinacea* (Arrow root), *Canna edulis* (Buthsarana), *Dioscorea alata* (Raja ala), *Dioscorea bulb ifera* (Udala) and *Dioscorea alata* (Angili ala) on *Lactobacillus* isolates obtained from fermented rice. Samples of six yam varieties were dried, powdered and incorporated at 3% (w/w) level into sterile skim milk media containing 12% (w/v) solids and activated culture (10% (v/v)). The mixture was incubated at 37 ^{0}C anaerobically for 12 hrs followed by refrigeration at 4 ^{0}C. Inulin was used as the reference sample and sample without prebiotic was used as the negative control. The plate counts and pH of each sample were monitored during the storage period of 0, 7th, 14th, 21st and 28thday. All tests and reference sample showed a significant increase in the colony forming units compared to the negative control. Arrow root and Kidaram showed the highest colony counts until the 14th day of storage. After the 14th day up to end of 28th day, the numbers of colonies were declined with the reduction of pH of all yam samples. This may be due to the high amount of acid that suppresses the growth of *Lactobacilli.* At 28th day Udala and Buthsarana showed the highest number of colonies. The negative control showed the highest pH (5 .78) at the end of the storage. Buthsarana and Udala showed the lowest pH; 3 .92, 4.01 respectively. Eventually, it can be concluded that Udala and Buthsarana have good prebiotic effect while others are having considerable effect. Therefore, local yams can be used as potential prebiotics.

Keywords: *Lactobacillus*, pH, Plate count, Prebiotic, Probiotic