

SUMMARY

The present study was aimed at isolating amino acid producing bacteria from local environment with an objective to enhance their production for commercial use. The bacteria were isolated from soil, water, milk, honey and sewage and the ones which specifically produced cysteine, methionine and lysine were further processed for enhanced production. A total of 510 bacteria were isolated, of which 250 were from soil sample, 100 from water, 50 from honey, 60 from milk and 50 were isolated from sewage samples. Of these 51.3% produced some amino acids *viz.* cysteine, methionine, lysine, glutamic acid and valine.

Of these nine isolates which produced significant amount of cysteine, methionine and lysine constituting 1.76% of the total isolates, were ultimately selected for further investigation. Five samples were from soil and two each from honey and sewage. The amino acid producing capability of the bacteria was improved using different types of fermentation media, based on glucose, urea, molasses, corn steep liquor and vitamins and minerals. The nine bacterial isolates showed significant increase in amino

acid production using these fermentation media. 10g/l methionine was produced in FM6, cost of this medium was Rs. 304.01/litre. The composition of this medium included, glucose 40g, KH_2PO_4 , 0.5g, $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ 0.3g and yeast extract 1.0g. 8.76g of cysteine per litre was produced in FM8. The cost of this medium was Rs. 90.5/litre and 5g/litre lysine in fermentation medium FM9 was produced. The cost of this medium was Rs. 108.74/- per litre. The important properties of these fermentation media are that they are low cost. For example molasses based medium has molasses as key ingredient which is waste of sugar industry and corn steep liquor is waste product of corn industry