APPENDIX II

APPENDIX IIa: Analysis of additional cost of edible biopolymer coatings

i) Whole fruits
   For coating about 1 Kg of fruit, 100ml of coating solution is required. The costs are expressed per Kg basis.

- Processed Aloe gel coated
  Cost of processed Aloe gel obtained from Aloe gel processors is approx. Rs.25/litre
  = Rs.2.50 for 100ml
  = Additional cost of Rs.2.50/- for coating 1Kg of fruits

- Commercial Aloe gel coated
  Cost of commercial Aloe gel is Rs. 500 per litre (Excel Industries, Hyderabad)
  =1000ml – Rs. 500 = 100ml – Rs. 50
  =Additional cost for 1 kg of fruits – Rs.50

- Purified chitosan coated
  Chitosan used at 2% level i.e. 2g for 100ml coating solution
  Cost of purified CH powder is Rs.80 for 100g (Rs.67/100g crude chitosan + Rs.13 for purification cost)
  Used at 2% level. So, 2g – Rs.2.50/-
  = Additional cost of Rs.2.50/- for coating 1Kg of fruits

- Commercial chitosan coated
  Cost of commercial chitosan = Rs.945 for 10g (SRL chemicals, Hyderabad)
  Used at 2% level. So, for 2g – Rs.189 i.e. Rs.189/- additional cost for 1 kg of fruits

ii) Minimally processed vegetables
   Carrot and radish shreds

- Aloe gel coated at 0.2% level
  Spray dried Aloe gel powder is Rs.600 for 100g (Excel Industries, Hyderabad)
  For 0.2g – Rs.1.20/- for 100g
  Therefore additional cost is Rs.12/Kg of shreds

- Chitosan coated at 0.2% level
  Purified CH powder is Rs.80 for 100g
  For 0.2g – Rs.0.16 for 100g
  Therefore, additional cost is Rs.1.60/Kg of shreds
APPENDIX IIb: Analysis of additional cost of Aloe gel enriched developed functional foods

i) Aloe gel enriched dahi

The additional cost of adding Aloe gel powder was calculated for 0.15AGD (optimum product), wherein, 0.15g% of skim milk powder is replaced with 0.15g% of Aloe gel powder. The additional cost incurred is detailed below:

- Cost of Aloe gel powder – Rs.600 for 100g
  =Rs.0.90 for 0.15g/100ml of 0.15AGD;
  =Rs.1.35 per serving of 150ml/1 cup of dahi

ii) Aloe gel enriched papaya powder

The additional cost of adding Aloe gel powder was calculated for 3AGFPP (optimum product), wherein, 3% of Aloe gel powder is added to the papaya powder.

- Cost of Aloe gel powder – Rs.600 for 100g
  =Additional cost of Rs.18 for 3g AG powder =100g of 3AGFPP

iii) Aloe gel enriched RTS beverage

In papaya RTS beverage, Aloe gel was added at 30% level (30AGPB – optimum product). Based on literature report on Aloe gel processing and information obtained from local Aloe vera processing plant the cost is estimated to be Rs.40/litre of Aloe juice. This includes expenditure on labor, electricity, preservative, bottles, and cans etc.

For 1 litre of beverage -300ml of Aloe juice is added.
= Rs12/- per litre additional cost.

However, as the juice is expected to be used directly and processed as a component of RTS beverage, the cost of bottles, cans and preservatives could be deducted. Therefore, final additional cost of the Aloe juice addition at 30% level could be taken as Rs.8 to 10/litre.

Hence for 1 serving (200ml) the additional price would amount to Rs.1.6 to 2.0/-.

APPENDIX IIc: Analysis of additional cost of chitosan enriched developed functional foods

i) Chitosan enriched wheat flour

Cost of purified chitosan – Rs.80 for 100g

Wheat flour with 3% chitosan was found to give optimum overall quality
=An additional cost of Rs.24/- for 3%CHWF/Kg of wheat flour

ii) Chitosan enriched chapati

One chapati is prepared from 30g wheat flour,
=Approx. 30 chapatis from 1 kg 3%CHWF

=Rs.24 for 30 chapatis

=Additional cost of Rs.0.8/chapati or Rs.1.6/serving (2 chapatis)