

## 11. RESULT

### 11.1 Quality assessment and Self-Life estimation of snail soup powder

#### 11.1.1 Biochemical analysis of snail soup powder

In biochemical analysis it was noticed at the very initial stage, this ready to cook snail soup powder contains, appreciable amount of protein ( $58.53 \pm 1.09\%$ ), carbohydrate ( $29.03 \pm 1.87\%$ ) and lipid ( $6.15 \pm 0.16\%$ ) at significant level ( $p < 0.05$ ) (Table 19) (Fig 19). Whereas very less percentage of moisture ( $2.1 \pm 0.18$ ) and ash ( $3.64 \pm 0.76$ ) content were observed at significant level ( $p < 0.05$ ) in that formulated soup powder After 6<sup>th</sup> months observation (continued in every months) it was realised that, the level of protein, carbohydrate, fat, moisture and ash content of soup powder were good and appreciable. Though significant level of reduction in protein (7.2 %), fat (1.86 %) and carbohydrate (1.18 %) (Table 19) were observed (Fig. 19). Side by side little bit increasing trend in moisture (1.83%) and ash (0.44 %), (Table 19) (Fig. 19) contents were noticed in soup powder throughout this six months of storage period. Nevertheless, this level of significant changes ( $p < 0.05$ ) (in the both form of increasing and decreasing) in soup powder was considerable, because these significant changes were within the acceptable limits (Chacko,2005).

#### 11.1.2 Quality assessment of snail soup powder

As per quality assessment (chemical and organoleptic assessment), a significant increasing trend was observed in pH, FFA, TVB-N and TMA-N values (Table 20) (Fig. 20 to 22). In sensory evaluation, it was noticed to have somewhat decreasing trend (Table 20) .This result was more prominent in radar chart graphical representation (Fig 24). Side by side, it was also realised, among the chemical parameters the rate of increasing trend

was maximum in TVB-N value and minimum in FFA value (Fig 21). Nevertheless, in soup powder this level of significant changes (in the both form of increasing and decreasing) were within the acceptable limits (Iyer *et.al.*,2000). Among the microbiological observations, TPC was low at the initial stage but it was gradually increased in count during the storage period. Yet, those counts were within the acceptable limit (Iyer *et.al.*,2000). Pathogen like, *Escherichia coli*, *Salmonella* spp and *Vibrio* spp were not detected during the six months storage period. The sensory evaluation of the soup powder was described in Table 20 (Fig 24) This result indicated that soup powder was carrying a good colour with a characteristic flavour. This obtained sensory scores, were good, acceptable and no remarkable changes in colour, flavour, taste, texture etc were observed up to the end of the six months of its storage period (Table 20) (Fig 24).

**Table 19:** Proximate biochemical composition of snail soup powder before packaging and after six months of storage final packaging condition

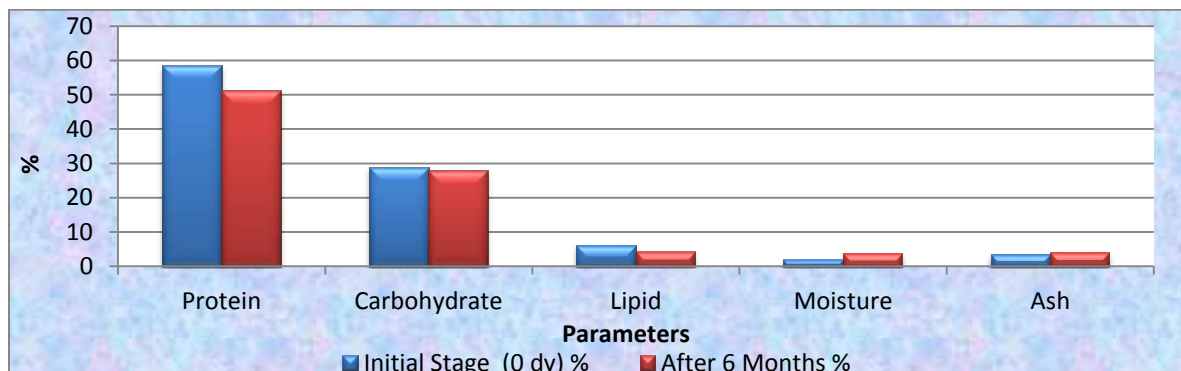
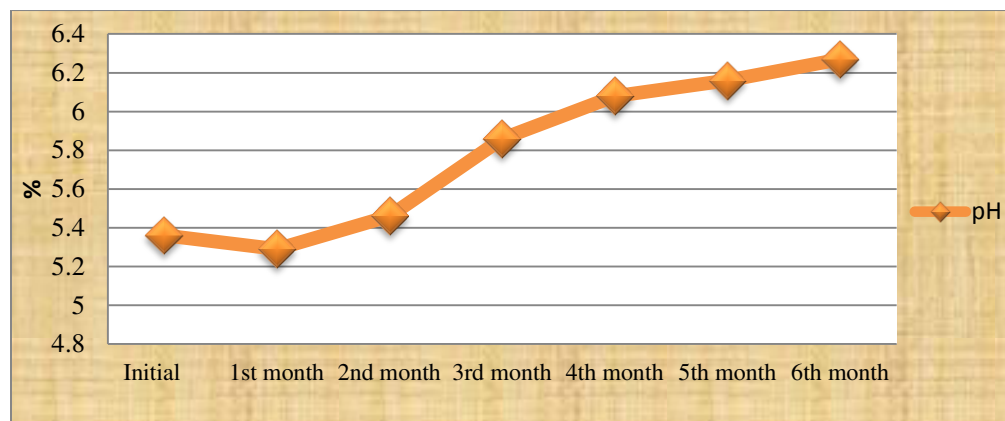
Sl no.	Biochemical parameter	Value (%)	
		Initial Stage (0 day) (d/w)	Final stage after 6 months (approx. 183 days) (d/w)
1.	Protein	58.53 ±1.09 <sup>bp</sup>	51.33±0.62 <sup>P</sup>
2.	Carbohydrate	29.03 ±1.87 <sup>bp</sup>	27.85±1.17 <sup>P</sup>
3.	Lipid	6.15 ±0.16 <sup>bp</sup>	4.29 ±0.73 <sup>P</sup>
4.	Moisture	2.10±0.18 <sup>bp</sup>	3.93±0.42 <sup>P</sup>
5.	Ash	3.64 ±0.76 <sup>bp</sup>	4.08±0.39 <sup>P</sup>

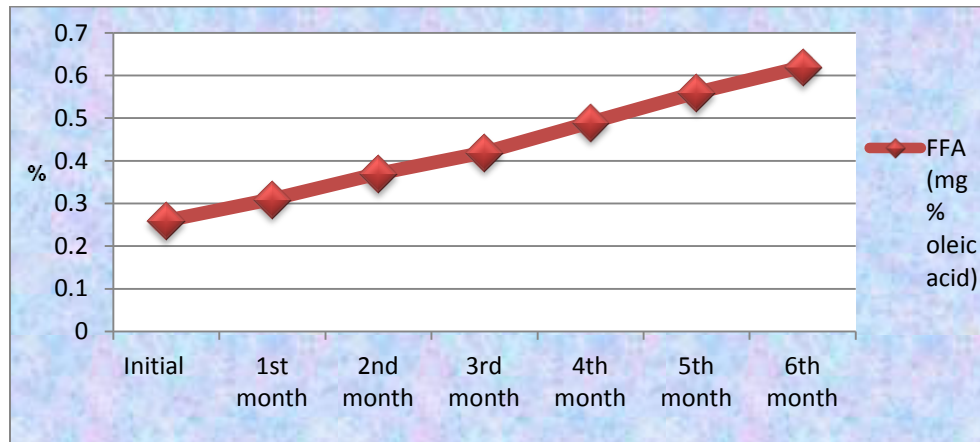
bp- before packaging condition, p-packaged condition (Values are mean ± SD), n=6

**Table 20:** Chemical and organoleptic (sensory evaluation) changes in packaged soup powder during six months of storage period

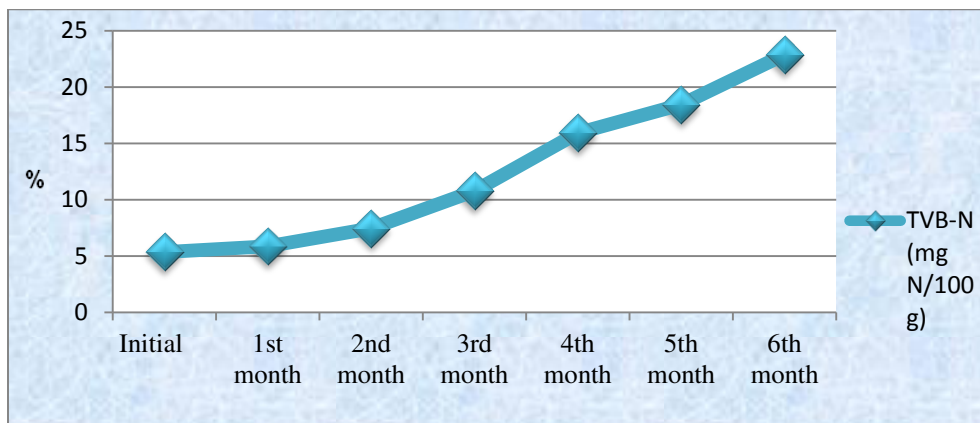
Storage period	Chemical and organoleptic analytical values					
	pH	FFA (mg % oleic acid)	TVB-N (mg N/100 g)	TMA-N (mg N/100 g)	TPC	Sensory evaluation
Initial <sup>bp</sup>	5.36±0.68	0.26±0.59	5.35±0.87	2.59±0.28	10 <sup>2</sup>	8.95±0.86
1 <sup>st</sup> month	5.29±0.95	0.31±0.26	5.88±0.79	2.97±0.78	10 <sup>2</sup>	8.76±1.02
2 <sup>nd</sup> month	5.46±0.75	0.37±0.65	7.46±0.59	3.68±0.86	10 <sup>2</sup>	8.69±0.73
3 <sup>rd</sup> month	5.86±0.51	0.42±0.28	10.79±0.66	4.19±0.57	10 <sup>3</sup>	8.46±0.84
4 <sup>th</sup> month	6.08±0.15	0.49±0.30	15.93±0.87	4.79±0.41	10 <sup>3</sup>	8.32±0.55
5 <sup>th</sup> month	6.16±0.26	0.56±0.86	18.45±0.91	5.09±0.56	10 <sup>3</sup>	8.27±0.88
6 <sup>th</sup> month	6.27±0.39	0.62±0.76	22.90±0.82	5.27±0.55	10 <sup>4</sup>	8.09±0.37

bp- before packaging condition, (Values are mean ± SD),n=6

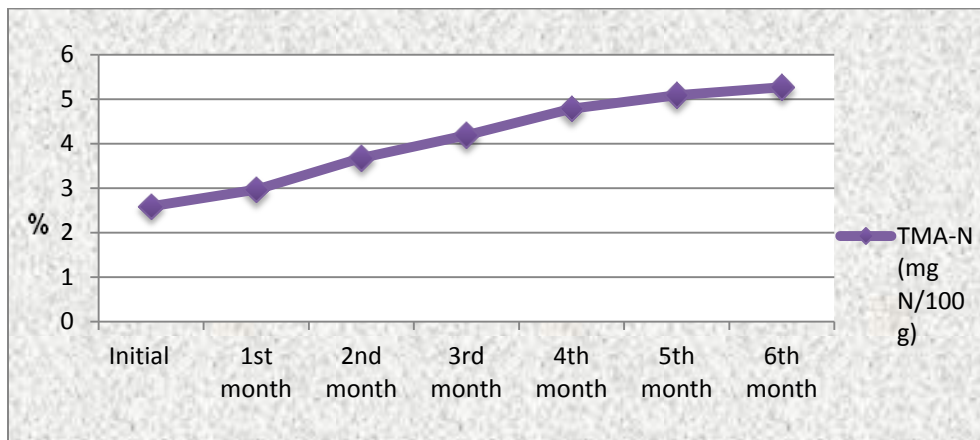
**Fig. : 19****Fig. : 20**



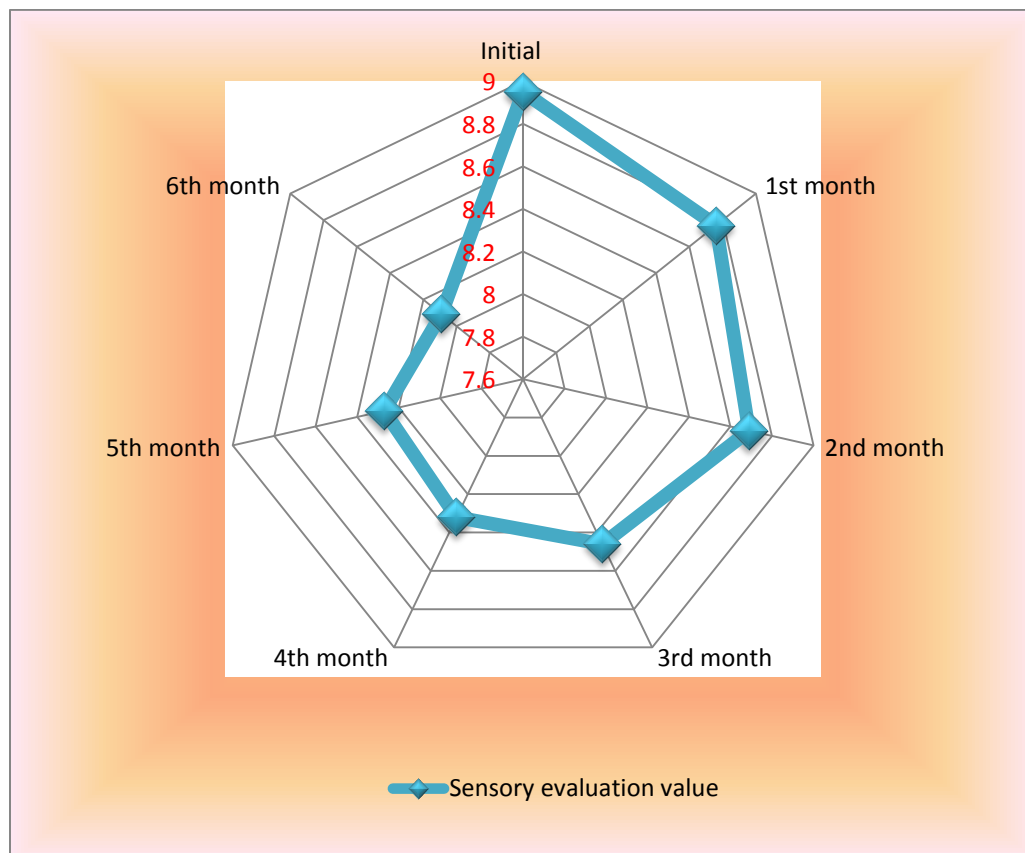
**Fig. : 21**



**Fig. : 22**



**Fig. : 23**



**Fig. : 24**



**Plate No. 40**



**Plate No. 41**



**Plate No. 42**