WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 7.421
Volume 7, Issue 3, 568-573 Research Article ISSN 2278 – 4357

STANDARDIZATION, CHARACTERIZATION AND STORAGE STABILITYOF VEG MAYONNAISE SUPPLEMENTED WITH CHILLI

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Article Received on
04 Jan. 2018,
Revised on 25 Jan. 2018,
Accepted on 15 Feb. 2018
DOI: 10.20959/wjpps20183-10995

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ABSTRACT

Mayonnaise is one of the most widely appreciated condiments because of its calorific values and the slightly sour and sweet taste which combined with cream gives it a mouth watering taste, also its variety of application being pointed efficiently and seamlessly with other condiments makes it so popular and appreciated. This is widely accepted and used as sauce for the dressing of the salad and also used in the burger's, pizzas, and many other products due to its flavor. Standardizationof mayonnaise and storage study was done in the phase of 0,15,30,45 days to see the various changes in themayonnaise. Mayonnaise is rich in fat (51.4%), energy provided by mayonnaise (432.73%), protein content (1.0%) ash contain (1.1%), carbohydrate (1.7%) and moisture content (45.9%) were observed. The different formulation of mayonnaise is prepared (S_1,S_2,S_3) mayonnaise premix (S_3) is mostly preferred by the expert panel members. For the packaging of the mayonnaise PET bottles are used and this is suitable for shelf life of the mayonnaise and to avoid the contamination in it.

KEYWORDS : Veg Mayonnaise, Storage Studies, Sensory Evaluation.

INTRODUCTION

Mayonnaise, one of the oldest and most used sauces worldwide and normally used as a sandwich spread is a mixture of oil, egg, vinegar and spices. Mayonnaise is a stable oil-in-water emulsion formed from the vegetable oil (not less than 65%) and egg yolks and is generally flavoured with mustard, salt, pepper, vinegar, and/or lemon juice (McClements and Demmetriades, 1998). According to Codex Alimentarius Commission (2000) specifications mayonnaise must contain at least 78.5% total fat and 6% pure egg yolk. Egg yolk is often used in mayonnaise as an emulsifier because it imparts desirable flavor, mouthfeel, and color

(Baldwin, 1990; Bringe, 1995). The emulsifying capacity of egg yolk is mainly due to presence of phospholipids, high density- and low density- lipoproteins (HDL and LDL). Non-associated proteins (livetin and phosvitin) along with LDL being the most important contributor to these emulsifying properties (Kiosseoglou, 1989). The good emulsifying properties of egg yolk lipoproteins are attributed to their highly flexible structures, allowing great affinity and adsorption at oil–water interfaces. Vinegar, salt, sugar and mustard are added to mayonnaise as flavoring ingredients, but all of these ingredients also seem to play an important role for the physical stability of emulsions (McClements and Decker, 2000). Due to large number of vegetarian consumers in Indian market, eggless mayonnaise has become also a popular product in Indian food industry.

Mayonnaise have good health benefits, it is a good source of vitamin E that prevents strokes.It also contains Omega-3 acid, which is good for heart. Mayonnaise helps in good functioning of lungs as well. It plays a vital role in keeping the lung vibrant and healthy. Mayonnaise is considered as the best treatment for dull and fizzy hair. It works as conditioner; it smoothen hair and leaves hair silky and softer. Take a little amount of Mayonnaise and apply it from the root to tip of the hair (Krishna *et al*, 2015).

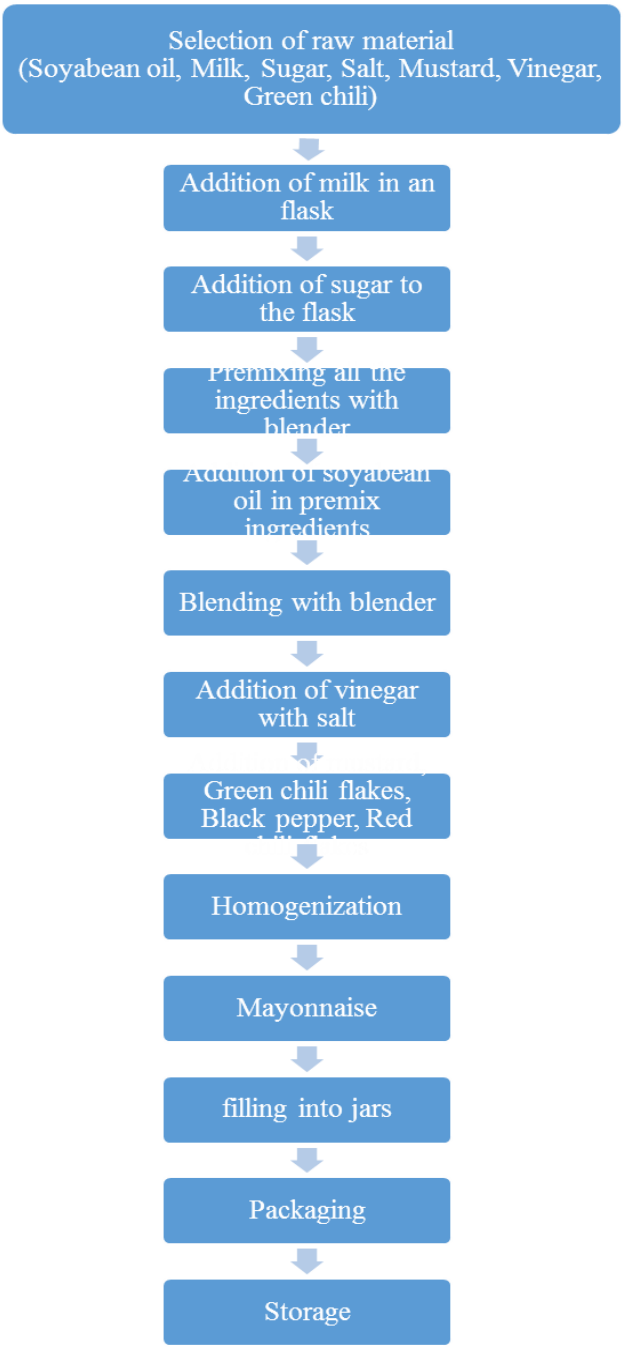
Present research framed to standardize the mayonnaise preparation, proximate analysis, sensory and storage studies of mayonnaise.

MATERIALS AND METHODS

Soybean oil, milk, salt, sugar, vinegar, green chili flakes, mustard, red chili flakes all materials were purchased from super market Kaylan. All analysis were carried out at College of Food Technology, Saralgaon.

Preparation of mayonnaise

Start by pouring milk and sunflower oil (both at room temp) into a blender bowl. Then add a dash of lemon juice or vinegar and a pinch of salt to taste. Put the arm of the blender in bottom of blender bowl (don’t move it).Wisk constantly until mayonnaise is thick and then oil is incorporated. Slowly move the blender up and down then add the chili powder. Once the emulsified sauce has the desired consistency, pour into a bowl. Mayonnaise is now ready to serve.



Flowchart 1: Preparation of Veg Mayonnise

Table 1: Recipe standardization of Preparation of mayonnaise (per 100 g).

Ingredients	Control	S_1	S_2	S_3
Soyabean oil (ml)	75	70	80	65
Milk (ml)	15	20	10	20
Sugar (g)	2	2	2	2
Salt (g)	1	1	1	2
Vinegar (ml)	3	3	3	3
Mustard (g)	1	1	1	2
Green chili (g)	1	1	1	2
Red chili (g)	1	1	1	2
Black pepper (g)	1	1	1	2

Proximate Composition and Quality parameters of the prepared mayonnaise

pH, protein, fat, crude fiber, ash, carbohydrate (difference method), Moisture content was done AOAC method (2002).

Organoleptic Evaluation of mayonnaise

Prepared mayonnaise was evaluated for organoleptic characteristics like colour, flavour, taste and overall acceptability by a panel of semi trained judges, comprised of graduate students and academic staff members of College of Food Technology, Saralgaon, Samples were scored based on a nine point hedonic scale. Judges were asked to rate the product on 9 point Hedonic scale with corresponding descriptive terms ranging from 9 'like extremely' to 'dislike extremely'.

Storage study

pH value

The pH estimation was done in order to find out whether a low pH was maintained throughout the study which could be an effective preservation. There was change in the pH during the entire storage (Table 2).

RESULTS AND DISCUSSION

Proximate composition

Proximate composition showed that on 0^{th} day showed pH 5.1 and days increased from 0 to 30 th days pH value noticed 4.6. there was no changes were observed in Fat, Protein, Ash and carbohydrate for 30 days of storage period which is showed in Table (2). Present study showed Fat (51.4%), protein (1%), Ash (1%), moisture (45.9%), carbohydrates (1.7) in range were observed. In the other study the energy contents of mayonnaise up to 626.40 kcal/100 g, 62.18 g of mostly fat, 1.26 g of protein in 100 g (Rashed et al., 2017).

Table 2: Storage Stability of Mayonnaise.

Parameter	0^{th}day	15^{h} day	30^{th} day
pH	5.1	4.8	4.6
Fat (%)	51.4	51.4	51.4
Protein (%)	1.0	1.0	1.0
Ash (%)	1.1	1.1	1.1
Moisture (%)	45.9	47.9	48.5
Crude fiber (%)	0.1	0.0	0.0
Carbohydrate (%)	1.7	1.7	1.8

Sensory Evaluation

It could be revealed from Table 3 that the maximum score was recorded for S_3 sample (8) followed by sample S_1 and S_2 (7.8, 7.5). Moreover among the entire samples of mayonnaise the spices added into it are more acceptable. Sample S_3containing spices red chili flakes, green chili flakes, black pepper reported the highest score in case of all the sensory quality attributes and found to be overall acceptable whereas slight differences in sensory score was observed in sample $S_1$and S_2.

The control sample had scored higher for taste followed by $S_2$and S_1. Thus increase in proportion of spices in the mayonnaise is not acceptable by the consumers.

Table 3: Sensory Evaluation of Mayonnaise.

Sample	Taste	Flavor	Aroma	Appearance	Overall acceptability
Control	7.5 ± 0.52	7.4 ± 0.51	7.1 ± 0.56	7.1 ± 0.31	7.1 ± 0.31
S1	8.2 ± 0.78	8.1 ± 0.91	7.7 ± 0.94	7.8 ± 0.87	7.8 ± 0.78
S2	7.9 ± 0.56	7.6 ± 0.69	7.6 ± 0.69	7.6 ± 0.69	7.5 ± 0.49
S3	8.4 ± 0.69	8.0 ± 0.81	8.0 ± 0.66	8.0 ± 0.47	8.0 ± 0.66

Control – control sample is purchased from Kalyan Market (veg mayonnaise).

S_1– With addition of mayonnaise and green chili flakes.

S_2- With addition of mayonnaise, green chili flakes, red chili flakes, black pepper.

S_3- With addition of mayonnaise, red chili, green chili flakes, black pepper, and red chili flakes.

CONCLUSION

This study has shown that mayonnaise having high energy content as well as fat content. The development of vegetable mayonnaise which create good market demand in Indian vegetarian population but also in improving the public understanding of healthy food choices. Mayonnaise can be targeted for malnourished people due to its high nutritive content.

REFERENCES

1. AOAC, Official Methods of Analysis of AOAC International, Association of Official Analytical Chemists, Arlington, 17th edition, 2002.
2. Baldwin, R.E., Functional Properties of Eggs in Foods, in Egg Science and Technology, edited by W.J. Stadelman and O.J. Cotterill, Food Products Press, New York, 1990; 341–383.

3. Bringe, N.A., and J. Cheng, Low-Fat, Low-Cholesterol Egg Yolk in Food Applications, Food Technol., 1995; 49: 94–106.
4. Codex Alimentarius Commission (2000). Procedures for Elaboration of codes and standards.
5. Kiosseoglou, V., Egg Yolk, Dev. Food Sci. 19:63–91 (1989).
6. Krishna, D.G., Alsaadi, F. S., Al-Hattali, W.M. (2015). Analysis of Physico-Chemical Parameters, Rheological Characterization and Texture of Commercial Mayonnaise. World Journal of Pharmacy and Pharmaceutical Sciences, 4(5): 885-889.
7. Mc Clements, D.J. and Demetriades, K 1998. An integrated approach to the development of reduced fat food emulsions. Critical Reviews of Food Science and Nutrition 58: 511–536.
8. McClements, D.J. 1999. Food Emulsions: Principles, Practice, and Techniques, CRC Press, Boca Raton, Florida, USA, pp 378.
9. McClements, D.J. and Decker E.A. 2000. Lipid oxidation in oil-in water emulsions: Impact of molecular environment on chemical reactions in heterogeneous food systems. Journal of Food Science 65: 1270- 1282.
10. Rashed, A.A., Noh, M.F.M., Khalid, N.M., Rahman, N.I.A., Tasirin, A., Omar, W.S.W.,Nawi, M.N.M.,Jamilan, M.A,&Selamat, R(2017). The Nutritional Composition of Mayonnaise and Salad Dressing in the Malaysian Market. *SainsMalaysiana*, 46(1): 139–147.