

APPLICATION OF PALM OIL PRODUCTS IN SALAD DRESSING

□ Nor Aini Idris

Salad dressing is an oil-in-water emulsion. A basic salad dressing contains oil, egg yolks, acidifying ingredients and cooked or partially cooked starch paste. The paste may be prepared from a food starch, tapioca flour, wheat flour, rye flour or any combination of these. The proportions of oil and eggs are balanced to obtain body, viscosity and texture. Salad dressing contains not less than 30% by weight of vegetable oil. It withstands freezing and frozen storage better if the oil used does not crystallize at low temperatures.

The term 'salad oil' is applied to oils that remain substantially clear in a refrigerator at or around 5°C, and these are the preferred oils in the manufacture of salad dressing. A high quality salad oil is required to have good cold stability at relatively low temperatures. To pass the cold test, the oil must be clear for at least 5.5 hours at 0°C.

PRODUCTION OF SALAD DRESSINGS

The process of making salad dressings involves the preparation of the starch paste, and mixing and homogenizing all the ingredients.

The steps in the production of salad dressings on a large scale are shown in *Figure 1*.

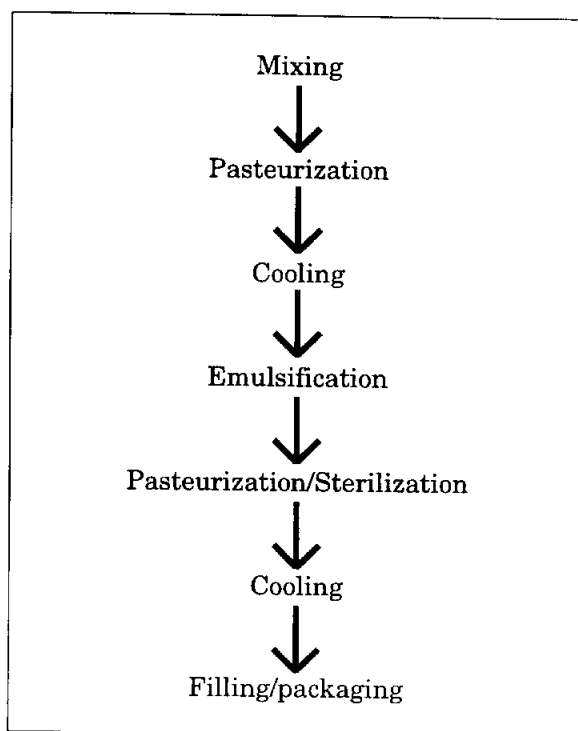


Figure 1. Large scale production of salad dressings.

VARIATIONS OF SALAD DRESSINGS

Other ingredients can be added to the basic recipe to achieve different flavours, for example chopped pickles, olives, minced onion, chili sauce, Worcestershire sauce, grated cheeses of various kinds, crushed pineapple, chopped maraschino cherries, *etc.*

PRODUCT DEVELOPMENT AND EVALUATION

In product development work conducted at PORIM, palm olein, the liquid fraction of palm oil, was used for making salad dressings. It was found that the higher IV palm oleins (IV 60–67) were suitable both for use as salad oil and for making salad dressings (*Figures 2 and 3*). The regular palm olein (IV 56–58) was not very suitable as the end product hardened during storage at refrigerator temperatures. Experiments were also conducted using red palm olein in-

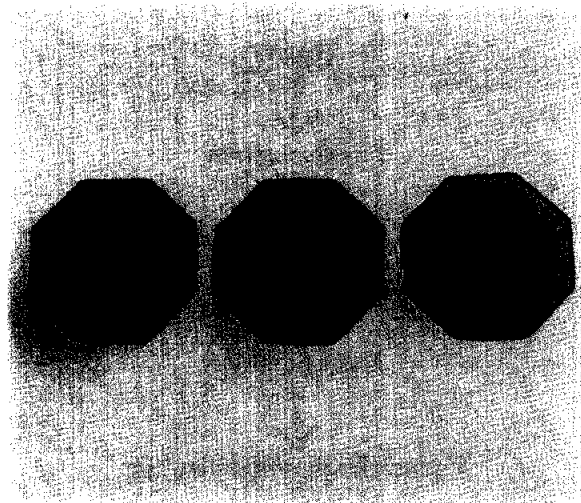


Figure 2. Salad dressing made with RBD palm olein using different formulations.

stead of refined, bleached and deodorized (RBD) olein. However, the end product was orange in colour instead of having the conventional colour of either commercial Thousand Island or French dressing (Figure 4). Thus, red palm olein was not suitable for this purpose. Even when the red oil was blended with RBD oil, the colour was still not appropriate.

Table 1 shows the pourability at refrigerator temperature (5°C) of salad dressings made with RBD oleins. Salad dressing made with formulation 1 was not pourable. Salad dressing made with formulation 2 was pourable till day five. Salad dressing made with formulations 3 to 8 remained stable and pourable throughout storage.

TABLE 1. POURABILITY OF SALAD DRESSINGS AT REFRIGERATOR TEMPERATURE (5°C)

Formulation	Days				
	0	1	3	5	10
1	√	X	X	X	X
2	√	√	√	√	X
3	√	√	√	√	√
4	√	√	√	√	√
5	√	√	√	√	√
6	√	√	√	√	√
7	√	√	√	√	√
8	√	√	√	√	√

√ = pourable
X = not pourable

The viscosity of the salad dressings increased when they were stored at refrigerator temperature (5°C) (Table 2). However, using formulations 3 to 8, the products did not harden and were still pourable and spoonable till the end of storage (30 days).

Microbiological analyses of the products were done and the results showed that the samples were free of any microorganisms.

Sensory evaluation was conducted using international panelists who came from various countries, including the United Kingdom, Germany, the Netherlands, the United States, Canada, Japan,

TABLE 2. VISCOSITY (in CPS) OF SALAD DRESSINGS AT 5°C

Formulation	Days		
	0	5	30
1	1.48×10 ³	Viscous	Very Viscous
2	1.60×10 ³	4.04×10 ³	Very Viscous
3	1.08×10 ³	2.48×10 ³	2.70×10 ³
4	1.60×10 ³	2.32×10 ³	3.00×10 ³
5	1.40×10 ³	2.32×10 ³	3.28×10 ³
6	1.00×10 ³	2.32×10 ³	2.50×10 ³
7	1.48×10 ³	2.72×10 ³	2.80×10 ³
8	1.36×10 ³	2.40×10 ³	2.24×10 ³



Figure 3. Salad served with "Thousand Island Dressing" made using RBD palm olein.

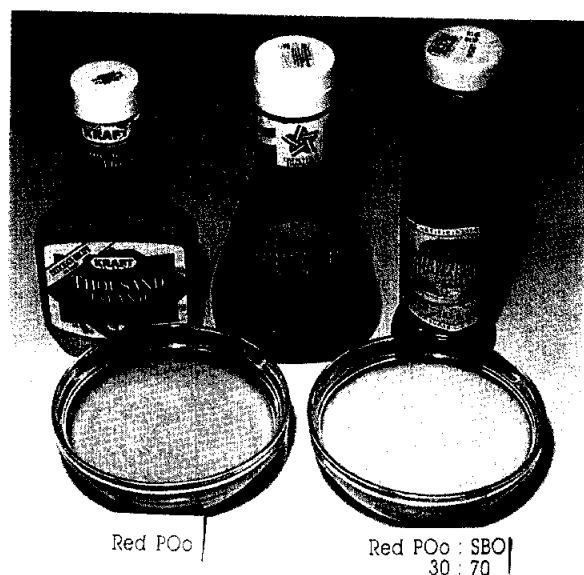


Figure 4. Colour comparison between commercial salad dressings and salad dressing containing red palm olein.

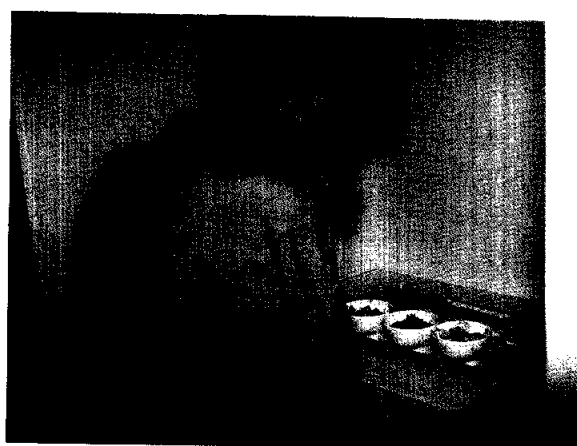
Korea, India, Pakistan and Malaysia. They were given three samples of salad dressings coded with three-digit random numbers. One of the samples was a plain salad dressing containing RBD palm olein, another one was a Thousand Island Dressing containing RBD palm olein, and the third sample was an imported commercial Thousand Island Dressing made with RBD soya bean oil. Figures 5a-c show a few scenes during the sensory evaluation session. Salads were provided to go with the dressings for the evaluation. Panelists were instructed to first evaluate the colour, then aroma, followed by consistency and then taste. The results of the sensory evaluation showed that Thousand Island Dressing containing RBD palm olein made in PORIM received scores comparable with those for the imported commercial product in terms of colour, aroma, consistency and taste. Thus the results indicated that good quality salad dressing can be made using palm olein.

ADVANTAGES OF USING PALM OLEIN

The study conducted at PORIM showed that the use of RBD palm olein as an ingredient in salad dressing is very promising. In addition to its consistent supply and ready



a



b



c

Figure 5. Sensory evaluation of salad dressing using international panelists.

availability, palm olein is competitively priced compared with other vegetable oils such as sunflower, soya bean, corn, canola or cottonseed oils. Another advantage is that palm olein is a very stable oil due to its high content of vitamin E, a natural anti-oxidant.