ABSTRACT

The Seeds of Long (L), Rose (R) and Starch (S) mangoes (local cultivars of Mangifera indica) contain fats which are lemon yellow in colour and are solid at room temperature (30 - 32 °C).

Some of the important chemical characteristics of the fats determined are:-

CHARACTERISTICS	LONG MANGO KERNEL FAT	ROSE MANGO KERNEL FAT	STARCH MANGO KERNEL FAT
Saponification Value	199.98	202.00	206.55
Unsaponifiable Matter %	0.05	0.43	0.26
Acid Value	17.21	15.52	18.70
Free Fatty Acid Value (As Oleic) %	8.65	7.80	9.40
Iodine Value	49.46	48.72	53.50
Hydroxyl Value	5.32	5.03	3.48
Slip Point °C	53.8	54.6	52.0
Dilatation at 10°C	1240	1240	1240
20°C	1170	1205	1070
30°C	1115	1110	950

The Fatty Acid Compositions obtained by G.L.C. analysis are :-

CHARACTERISTICS	LONG MANGO KERNEL FAT	ROSE MANGO KERNEL FAT	STARCH MANGO KERNEL FAT
Caprylic %	0.04	0.03	-
Pelargonic %	0.06	0.63	0.17
Capric %	0.09	0.04	0.001
Undecylinic %	0.08	0.62	0.22
Myristic %	0.40	0.52	0.16
Palmitic %	7.98	8.12	7.70
Stearic %	49.03	51.63	44.47
Oleic %	29.53	31.58	36.40
Linoleic %	7.57	1.72	5.82
Linolenic %	0.71	0.76	0.90
Arachidic %	2.68	2.53	2.40
Behenic %	0.16	0.001	-
Unidentified %	1.67	1.82	1.76

It is to be noted that Behenic and Caprylic Acids were identified in the fats of Long and Rose Mango Kernels but were absent in Starch. Behenic Acid was not reported in any of the Literature surveyed.

Some of the important components of the extracted meals are :-

CHARACTERISTICS		LONG MANGO MEAL	ROSE MANGO MEAL	STARCH MANGO MEAL
Carbohydrates :-				
- Starches	%	50.10	49.13	50.13
- Crude Fiber (Cellulose)	%	5.03	4.23	5.09
- Sugars	%	8.65	10.17	8.09
Crude Protein	%	5.87	6.44	6.44
Calcium	%	0.093	0.086	0.095
Iron	%	0.009	0.009	0.012
Potassium	%	3.18	4.45	4.24

The extracted meals contain nine of the ten Essential Amino Acids, Trytophan being absent. Of the Essential Amino Acids present, Leucine is highest in percentage - 7.0% (L), 8.1% (R), 7.7% (S).

The shells were analysed as a separate component and some of the important chemical characteristics are :-

CHARACTERISTICS		LONG MANGO SHELL	ROSE MANGO SHELL	STARCH MANGO SHELL
Carbohydrates :-				
- Starches	%	31.49	34.08	34.06
- Crude Fiber (Cellulose)	%	59.03	54.28	57.34
- Sugars	%	Trace	Trace	Trace
Crude Protein	%	2.29	2.87	2.27
Calcium	%	0.126	0.095	0.113
Iron	%	0.028	0.076	0.058
Potassium	%	1.69	1.66	1.05

Nine Essential Amino Acids were also present in the Shells with Leucine being highest in percentage - 7.3% (L), 7.5% (R), 7.8% (S). It is to be noted that chemical characteristics of the Shells of mango seeds as a separate component have not been reported in the Literature surveyed.

The fats may be used for inedible purposes such as soap and candle manufacture and in cosmetics and toiletries. The Meals may be enriched and used as flour or as animal feed. The Shells although high in Fiber content, yet in view of the presence of almost all of the biologically Essential Amino Acids can probably be used as a base for the preparation of animal feeds.