The unsaponifiable matter content of sal fat varies from 0.63 - 1.35 percent depending on the source of the kernel. The literature indicates 0.9 - 2.2 percent unsaponifiable matter of sal fat. Much variation is noted in the unsaponifiable matter content of sal fat from kernels of different growing areas in each sal producing state. Mango fat also shows a variation from 0.75 - 1.60 percent of unsaponifiable matter. It is interesting to note that variation is quite significant (1.0 - 1.60 percent) in the case of its different varieties in the same growing area. For mango fat, unsaponifiable matter content has been reported in the literature to vary from 1.00 - 2.40 percent. Mowrah fat varies from 1.71 - 2.31 percent in unsaponifiable matter content as against 1 - 3 percent reported in the literature.

The percentage of sterol in sal fat varies from 0.06 - 0.43 depending on the growing areas while the sterol percentage of mowrah fat is very low and lies between 0.06 - 0.12 percent. The sterol percentage of mango fat is generally high compared to sal fat and mowrah fat. Much higher percentage is observed in the case of mango fat from 0.51 - 0.58 of different variety grown in the same area in West Bengal. The varietal difference does not appear to show any variation in the sterol content.
As regards the composition of sterol of the three seed fats, it is evident from Tables XVI - XVIII that the seed fats have a common pattern of sterol composition. Each is composed of cholesterol, stigmasterol and sitosterol only. In each fat, the amount of sitosterol is maximum followed by stigmasterol and cholesterol. In the case of sal fat, sitosterol content varies from as low as 41 percent to as high as 79 percent. The usual range of variation is however between 54 to 69 percent with respect to the origin of sal fat. The percentage of stigmasterol is also variable normally from 25 to 30 percent although as low as 17 in the case of one sample and as high as 36 and 43 percent of stigmasterol are found to constitute sal fat. It is interesting that cholesterol invariably occurs in sal fat and shows considerable variation with location even in the same sal seed growing state. The range of cholesterol lies between 3 and 23 percent but the usual range is from about 8 to 14 percent.

In the case of mowrah fat, the percentage of sitosterol is not too high compared to sal fat and mango fat. The percentage of stigmasterol lies in the usual range 30 - 36 percent whereas the percentage of cholesterol is high.

In the case of mango kernel fat, the amount of sitosterol is about 80 percent. Unlike sal fat, there is no significant variation in sitosterol content of mango kernel fat. The amount of stigmasterol appears to be also more or less same with respect to both variety and location. Cholesterol varies from about 4-7
percent. A difference in cholesterol percentage can be noted for the different variety of mango growing in Murshidabad in West Bengal.

Sal fat, mowrah fat and mango fat are potential cocoa-butter substitute. However, compared to cocoabutter, sal fat, mowrah fat and mango kernel fat contain much higher cholesterol in their unsaponifiable fraction. The proportion of sitosterol and stigmasterol of cocoabutter is more or less similar to those of sal fat. Mango kernel fat contains much higher sitosterol than cocoabutter.

It is considered imperative to examine the sterol composition of cocoabutter substitutes that can be produced from sal fat, mowrah fat and mango fat on modification by fractionation from a solvent like acetone, hexane and isopropanol. This may be helpful in detecting cocoabutter substitutes for sal fat, mowrah fat and mango fat in authentic cocoabutter samples.