

water soluble drug. The drug is released from matrix network by diffusion slowly. Since the matrix tablet is bioadhesive in nature the drug is released from the tablet slowly and made available for absorption. As the drug is released in a gradually in controlled manner MRT has increased considerably.

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Physico-chemical Composition of Two Medicinal Plant Seed Oils

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The seeds of two medicinal plants, Awala and Bhandi Gulab were extracted with n-hexane to yield the oils in 15.8 and 17.4%. The seed oils were analysed for characteristics such as specific gravity, refractive index, colour, acid value, iodine value and saponification value. The fatty acid composition of these seed oils, as determined by GLC, showed the major fatty acids to be palmitic, oleic and linoleic acids.

Awala (*Phyllanthus emblica*, Fam. Euphorbiaceae) fruits are a rich source of Vitamin C¹. It is useful in treatment of pulmonary tuberculosis. It is also used to a great extent in preparation of ayurvedic and household medicines. Dried fruits are also useful in diarrhoea. Bhandi Gulab (*Thespesia populona* Fam. Malvaceae) is also known as paras pipel². The bark, leaves, flowers and fruits are useful in cutaneous affections such as scabies, ringworm and, eczema. This piece of work reports on, the physical and chemical characteristics of these seed oils alongwith the fatty acid composition by Gas liquid Chromatography (GLC).

The seeds were collected from local cultivators and were decorticated, powdered and extracted with n-hexane. The seeds were analysed for oil content and moisture content by ISI methods³. The seed oils, after filtration and desolventisation, were analysed for colour, specific gravity, refractive index acid value, iodine value and

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saponification value by standard ISI methods⁴.

The oils were converted to their respective fatty acid methyl esters (FAME) by Kulkarni *et al* method⁵. The FAME were analysed by GLC unit having a flame ionization detector (FID) at 280°, on a 15% EGSS-X column packed on chromosorb-W (40-60 mesh). The chart speed was 60 cm/min. The temperatures were 300° and 200° at the injection port and column respectively. Nitrogen was used as a carrier gas having a flow rate of 30 ml/min. The air flow was maintained at 300 ml/min. The sample was applied in 1 µL quantity. The fatty acids were identified by comparing their RRT values with those of standards (Analabs, USA) by the method of Bhakare *et al*⁶. The quantification was done by triangulation method of Khotpal *et al*⁷.

The physical and chemical characteristics of the seed oils (Table 1) show that Awala seeds has a slightly lower oil content than Bhandi Gulab seeds (15.8 and 17.4%). The seed oils had differing iodine values (132.8 and 89.4).

**TABLE 1 - PHYSICO-CHEMICAL CHEMICAL CHARACTERISTICS AND
FATTY ACID COMPOSITION OF SEED OILS***

Characteristic	Seed Oils	
	Awala	Bhendi Gulab
Moisture content in seeds (% by wt.)	03.5	05.8
Oil content** in seeds (% by wt.)	15.8	17.4
Specific gravity (30°)	0.9184	0.9251
Refractive index (30°)	1.4720	1.4725
Colour*** (units)	21	28
Acid value	10.3	9.3
Iodine value	132.8	39.4
Saponification value	189.0	194.3
<u>Fatty acids (wt.%)</u>		
Palmitic	3.4	36.6
Steric	0.5	0.1
Oleic	35.7	14.0
Linoleic	56.7	49.2
Linolenic	0.9	0.1
Others	2.8	-

* : means of duplicate analysis, ** : on wt. of seeds, dry basis, *** : expressed as Y+5R in 1/2' cell. Others include myristic and arachidic acids.

The fatty acid composition (Table 1) shows the presence of palmitic, stearic, oleic, linoleic and linolenic acids alongwith with minor quantities of myristic and arachidic acids.

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