Short Communication

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A NOVEL METHOD FOR THE SEPARATION OF HUSK AND KERNEL FROM THE SEEDS OF *PEGANUM HARMALA*

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Peganum harmala (Zygophyllaceae), which grows in abundance in tropical areas is known to contain alkaloids and oil [1-5]. The alkaloids are concentrated in the husk while the oil is found in the kernel [5]. Separation of the two (husk and kernel) had been the major hurdle in the effective utilization of the seed as an alternate source of edible oil. For the extraction of active ingredients the methods used included crushing of seeds followed by partitioning in aqueous and non-aqueous solvents [6,7], repeated percolation of uncrushed seeds by methanol [3,4] or germination metabolites of seeds [5]. Complete separation by these methods are lengthy as well as expensive.

An easy practical method for the effective separation of husk and kernel is now reported. The seeds were soaked in water (6.5%, w/w) for 5 minutes. A rotary chopper (10000 rpm)was used to shave off the husk. The husk tends to re-stick with the kernel, so the shaved off husk was separated immediately by vigorous sieving. Bulk of kernel was separated from the husk, however, about one tenth of husk tends to stick with kernel and had to be processed again for the separation.

TABLE 1. YIELD OF OIL AND ALKALOIDS (WT %) USING DIFFERENT METHODS.

Methods	Husk	Kernel	Oil		Alkaloids	
			Based on kernel	Based on seed*	Based on husk	Based on seed
Germination metabolites[5]	50	50	20	10	14	7
Physical separation. (present study)	30	70	26	18.2	21	6.3

*Extraction of crushed seed gave 11.1 % [6] and 14.23% [7]oil.

The husk was dissolved in water to recover alkaloids according to already published methods [1,2]. The reddish yellow oil smelling kernel was crushed and extracted with *n*-hexane for its oil content. Oil was freed of solvent in *vacuo*. The oil was alkali refined and decolourised with charcoal. The product was straw coloured oil. Table 1. compares the yield of alkaloids and oil using the traditional method of germination metabolites of harmala seeds with the new technique. The oil content in harmala seeds as against 15-24% in cotton seed [8], together with the alkaloids present makes it an attractive source of edible oil with alkaloids as by-product.

Key words: *Peganum harmala*, Seeds, Husk separation.

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