EFFECT OF CHROMATOGRAPHIC FRACTIONS OF *DAUCUS CAROTA* LINN. (SEEDS) ON FERTILITY IN FEMALE ALBINO RATS

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Daucus carota Linn., a herb belonging to the Umbelliferae family, has been reported to possess antifertility activity (Chaudhury, 1966). Garg & Garg (1971a) reported encouraging antifertility activity in the alcoholic and aqueous extracts of the seeds of this herb in female albino rats. No work seems to have been done on the chromatographic fractionation of the different extracts of the seeds of this herb. It was considered worthwhile to undertake this study and the different fractions obtained were tested for antifertility activity in female albino rats.

The air-dried powdered seeds of *Daucus carota* Linn. were successively extracted with petroleum ether (b.p. 60 to 80° C), 95% alcohol and distilled water in a Soxhlet apparatus. The extracts were evaporated to dryness under reduced pressure. The residues obtained from the petroleum ether and alcoholic extracts were dissolved in a minimal quantity of petroleum ether and alcohol, respectively, and were chromatographed separately over chromatographic alumina (Brockmann; E. Merck). The amount of alumina used in the column was 20 g/g of the crude extract to be chromatographed. The different fractions were collected by eluting the column successively with petroleum ether, benzene, chloroform, methanol and their mixtures. The aqueous extract was dissolved in a minimal quantity of distilled water and was successively extracted with chloroform and ethyl acetate. The solvents were stripped off from all these fractions. The different fractions so obtained with different extracts were converted into dosage forms by making a suspension in gum acacia and were tested for antifertility activity in female albino rats according to the method described earlier (Garg & Garg, 1971b) which would detect any anti-zygotic, blastocystotoxic, anti-implantation or early abortifacient activity. The only parameter which would not be detected by this method would be its potential anti-ovulatory activity.

Table 1 shows that pregnancy was inhibited by the chloroform and methanol fractions of the petroleum ether extract, the chloroform+methanol (9:1 v/v) fraction of the alcoholic extract and the chloroform and ethyl acetate fractions of the aqueous extract. None of the young born to treated mothers showed any abnormalities up to the age of 1 month.

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TABLE I
EFFECT OF VARIOUS CHROMATOGRAPHIC FRACTIONS OF THE DIFFERENT EXTRACTS OF THE SEEDS OF *Daucus carota*
LINN. ON IMPLANTATION IN RATS

Extract	Chromatographic fractions	No. treated	No. pregnant	No. littering	Mean no. in litter
Control (vehicle only)*		10	10	10	7.80
Petroleum ether†	(a) Petroleum ether	5	3	3	4.00
	(b) Petroleum ether + benzene (1:1 v/v)	5	3	3	7.00
	(c) Benzene	5	4	4	5.75
	(d) Benzene + chloroform (1:1 v/v)	5	5	5	6.60
	(e) Chloroform	5	1	0	0.00
	(f) Chloroform + methanol (9:1 v/v)	5	3	3	5.66
	(g) Chloroform + methanol (1:1 v/v)	5§	1	0	0.00
	(h) Methanol	5	0	0	0.00
Alcoholic‡	(a) Petroleum ether	5	2	1	3.00
	(b) Petroleum ether + benzene (1:1 v/v)	5	3	3	3.66
	(c) Benzene	5	4	4	6.25
	(d) Benzene + chloroform (1:1 v/v)	5	4	4	5.00
	(e) Chloroform	5	3	3	5.30
	(f) Chloroform + methanol (9:1 v/v)	5	1	1	3.00
	(g) Chloroform + methanol (1:1 v/v)	5	2	1	6.00
	(h) Methanol	5	2	1	5.00
Aqueous*	(a) Chloroform	5	1	1	3.00
	(b) Ethyl acetate	5	1	0	0.00
	(c) Residue	5	3	2	2.50

Note: * Dose 100 mg/kg fed orally from Days 1 to 7 of pregnancy.

† Dose 20 mg/kg fed orally from Days 1 to 7 of pregnancy.

‡ Dose 50 mg/kg fed orally from Days 1 to 7 of pregnancy.

§ 1 rat died on Day 3 of treatment.

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