

## Short Communication

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**AGRO-CHEMICAL EVALUATION OF SOME  
EXOTIC SPECIES OF GENUS  
CUPHEA INTRODUCED IN PAKISTAN**

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Cuphea (N.O. Lythraceae) is a large genus of over 300 species including herbs and shrubs in the tropics and sub tropics of America [1]. Research interest in Cuphea seed oils increased in 1960s after the initial discovery that the species in the genus were rich in short and medium chain fatty acids ( $C_8$ - $C_{12:0}$ ) which are important in the manufacture of detergents, plasticizers, perfumes, flavours, lubricants and other products [2,3].

Five Cuphea species i.e. *C. carthagenensis*, *Cuphea hookerina*, *C. Wrightii*, *C. Painteri*, and *C. ignea* were sown in the experimental fields of the Lahore Laboratories with a view to evaluating their adaptability in the Pakistani environment and if successful to become a source of valuable

TABLE 1. ECOMETEROLOGICAL DATA FOR THE CIRCULATION  
OF *CUPHEA* SPECIES

S. Species No.	Stages	Temperature °C		Humidity		Irrigation
		Min.	Max.	Min.	Max.	
Sowing						
1. <i>C. Carthagenensis</i>	10.3.89	16.8°	26.6°	54%	65%	Thrice a week
2. <i>C. hookerina</i>	"	"	"	"	"	"
3. <i>C. wrightii</i>	"	"	"	"	"	"
4. <i>C. Painteri</i>	"	"	"	"	"	"
5. <i>C. ignea</i>	"	"	"	"	"	"
Germination						
	17.7°	25.9°	58%	84%		Twice a week
Fruiting and flowering						
	20.5°	37.7x	16%	35%		Once a week
Harvesting						
	25.4.89					
	10.5.89					

industrial acids for the chemical industry. The present report provides the agricultural data showing the adaptation of these species and the fatty acids composition of the oil obtained from the five species of the genus Cuphea.

The seeds for the study were obtained from North Regional Research Centre, USDA and their germination/ plantation trials were made during March, 1989. The ecometrological data is given in Table 1. The plants mature in about 90 days and thus have a good chance to become a regular summer crop.

The oil yield as well as the fatty acid composition of the oils as shown in Table 2 is not different from the reported values and suggest that these species of Cuphea are a rich source of useful industrial raw materials [3,4].

TABLE 2. OIL YIELD AND FATTY ACID COMPOSITION OF  
CERTAIN *CUPHEA* SEED OILS.

S.Species No.	% Oil	% of fatty acids								
		8:0	10:0	12:0	14:0	16:0	18:0	18:1	18:2	18:3
1. <i>Cuphea-Carthagenensis</i>	32.9	3.0	15.0	60.1	8.2	1.9	0.9	5.7	6.3	0.5
2. <i>C. hookerina</i>	20.0	66.23	0.1	0.2	1.9	0.6	3.0	5.0	0.0	4.0
3. <i>C. Wrightii</i>	32.0	4.0	29.4	54.0	4.0	2.9	1.1	3.0	2.0	3.0
4. <i>C. Painteri</i>	36.0	70.0	23.0	0.2	0.3	2.4	0.2	2.0	2.0	0.0
5. <i>C. Ignea</i>	34.0	4.0	86.0	1.0	0.2	1.8	0.0	2.0	4.0	0.0

**Key words:** Cuphea, Detergents, Plasticizers, Lubricants

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