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Infestation of *Liriomyza trifolii* (Burgess) in Relation to Varying Agronomic Practices on/in Summer Castor

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The serpentine leaf-miner, *Liriomyza trifolii* (Burgess) (Agromyzidae : Diptera) introduced recently in India causes damage to more than 250 host plants (Viraktamath *et al.*, 1993). Monsoon-castor induces heavy population and speedy development of this pest (Kapadia and Parmar 1993). It remains active throughout the year (Kapadia, 1994), and seems to be damaging also to the winter and summer sown castors under Junagadh conditions of Gujarat.

For search the feasibility of summer castor, a split plot designed experiment consisting three dates of sowing (15th and 30th January, and 15th February), two spacings (60 x 90 cm, 60 x 60 cm) and three varieties, was laid out in the University Campus, Junagadh during summer 1995. The experiment was observed to be heavily infested with leaf-miner and observations were, therefore, taken during May to know pest density in relation to sowing date, spacing and variety. Five randomly selected plants in each plot were observed to record larval mines density (=number of larvae) as

TABLE 1

Effect of different interactions (Sowing date, Spacing and variety) on population of *L. trifolii*

Sowing date X Spacing X Variety interactions.

Sowing date.	*No. of larvae/leaf and variety*					
Spacing	*GAUC-1*		*GC-2*		*GCH-4*	
$D_1 X S_1$	168.85	(12.76)*	88.00	(9.37)	108.20	(10.32)
$D_1 X S_2$	129.60	(11.26)	98.90	(9.89)	156.10	(12.39)
$D_2 X S_1$	172.00	(12.89)	166.90	(12.90)	185.35	(13.45)
$D_2 X S_2$	166.35	(12.84)	87.20	(9.23)	186.80	(13.45)
$D_3 X S_1$	186.75	(13.50)	124.85	(10.70)	156.95	(12.22)
$D_3 X S_2$	167.55	(12.82)	150.25	(12.18)	162.80	(12.03)

S. Em. ± = 0.62 Non-Significant.

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1.	2.		3.		4.	
Sowing date X Variety interaction						
D_1	149.22	(12.01)	93.45	(9.63)	132.15	(11.36)
D_2	169.18	(12.87)	127.05	(11.07)	186.08	(13.45)
D_3	177.15	(13.16)	137.55	(11.44)	159.88	(12.12)
S. Em. ± = 0.50 Non-significant						
Spacing X Variety interaction						
S_1	175.87	(13.05)	126.58	(10.99)	150.17	(12.00)
S_2	154.50	(12.31)	112.12	(10.43)	168.57	(12.62)
S. Em. ± = 0.50 Non-Significant						

$\sqrt{X + 0.5}$ transformed value.

D_1 = 15th January
D_2 = 30th January
D_3 = 15th Fabruary
S_1 = 90 x 60 cm
S_2 = 60 x 60 cm

per method for assessing density of *L. trifolii* of Kapadia and Parmar (1995) in which number of larval mines on third leaf from the top of plant was counted. Data collected were computerised for analysis.

The data analysis (Table 1) revealed that the different interactions, sowing date X spacing X Variety, Sowing date X variety, Spacing X variety and agronomical practices excluding varieties i.e. sowing dates and spacings did not influence significantly the pest population. However, variety GC-2 sown in January at 60 x 60 cm distant has comparatively low mines i.e. 87.20 – 98.90 than other combinations having 124.85-166.90 mines/leaf. Pest density was varied significantly according to varieties. Variety GC-2 recorded low mines (119.35/leaf) than GCH-4 (159.37) and GAUCH-1 (165.18) (Table 2). This finding proved GCH-4 and GAUCH-1 as most preferable varieties of the leaf-miner in support of similar finding of Kapadia (1993) who found monsoon sown both the varieties as susceptible. Lakshimnarayanan *et al.*, (1992) observed this leaf-miner infesting castor fields sown in monsoon, winter and summer.

TABLE 2

Larval population of *L. trifolii* on three varieties of castor.

Variety	*No. of larvae/leaf*	
GAUG-1	165.18	(12.68)*
GCH-4	159.37	(12.31)
GC-2	119.35	(10.71)
S. Em. ±		(0.36)
C. D. at 5%		(1.01)

* $\sqrt{X + 0.5}$ transformed value.

These observations indicate that *L. trifolii* can multiply on as monsoon castor as summer castor, without seasonal effect on its ability to survive and multiply.

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