

## MANAGEMENT OF *UMAX* SP. (LIMACIDAE: STYLOMMATOPHORA) - A PEST OF ORCHIDS IN KERALA

Orchids are seen damaged by a slug *Limax* sp. Earlier record of slug infesting orchids is of *Deroceras laeve* by Alicata (1957). He recommended two ground sprays of one per cent metaldehyde at an interval of three weeks for controlling the pest. A preliminary study on the management of *Limax* sp., a major pest of orchids in Kerala was undertaken in the College of Horticulture, Vellanikkara, Thrissur.

Management studies of slugs were carried out in the laboratory in petridishes of 15 cm diameter. Three insecticides viz., carbaryl (Sevin 50 WP.), phorate (Thimet 10 G), carbofuran (Furadan 3 G) and a molluscide metaldehyde at different concentrations were tested. Sevin and metaldehyde were used both as baits and sprays. The baits were prepared by mixing the toxicant with the base material (rice bran) and powdered sugar. A little quantity of water was also added to moisten it.

One gram of the bait was placed in each petridish and in the experiment with sprays, 1ml of the solution was poured into the upper and lower portion of each petridish. The dishes were then swirled to get a uniform coating of the solution and were then allowed to dry. In the granular application, the insecticides were sprinkled in each petridish.

Each concentration was taken as separate treatment and three replications were made of each treatment. Three slugs collected from the field were released to each petridish along with tender leaves of *Dendrobium* spp. as food. Observations on the mortality were taken at intervals of 24, 48 and 72 hours and per cent mortality was calculated. Statistical analysis was done by employing the methods described by Snedecor and Cochran (1967).

A maximum mean mortality of 44.44 per cent was recorded in treatments T<sub>7</sub> and T<sub>6</sub> followed by T<sub>14</sub> (33.33%) and T<sub>1</sub>, T<sub>13</sub> and T<sub>15</sub> (22.22%) within 24 hours of treatment. No mortality was observed in other treatments. Treatments T<sub>1</sub>, T<sub>2</sub>, T<sub>6</sub>, T<sub>13</sub>, T<sub>14</sub> and T<sub>15</sub> were on par and differed significantly from other treatments. Highest mean mortality of 55.55 per cent was

obtained with treatments T<sub>6</sub> and T<sub>15</sub> within 48 hours of treatment. Treatments T<sub>7</sub>, T<sub>10</sub>, and T<sub>16</sub> yielded no mortality and these treatments were on par with T<sub>19</sub> (control). Treatment T<sub>14</sub> showed the highest mean mortality of 66.67 per cent after 48 hours and within 72 hours of treatment. This was on par with treatments T<sub>4</sub>, T<sub>5</sub> and TB, which yielded a mean mortality of 44.44 per cent. Among the various treatments, maximum mean mortality of 44.44 per cent was recorded with T<sub>14</sub> irrespective of the time period.

Table 1. Treatment details

Treat. No.	Insecticide	Strength
<i>Baits</i>		
T <sub>1</sub>	Metaldehyde	3%
T <sub>2</sub>	..	5%
T <sub>3</sub>	Cabaryl	3%
T <sub>4</sub>	..	5%
T <sub>5</sub>	Metaldehyde-carbaryl	1.5-1.5%
T <sub>6</sub>	..	2.5-2.5%
<i>Sprays</i>		
T <sub>7</sub>	Metaldehyde	1%
T <sub>8</sub>	..	3%
T <sub>9</sub>	..	5%
T <sub>10</sub>	Carbaryl	1%
T <sub>11</sub>	..	3%
T <sub>12</sub>	..	5%
<i>Granules</i>		
T <sub>13</sub>	Phorate	0.5 g/petridish
T <sub>14</sub>	..	1.0 g/ ..
T <sub>15</sub>	..	1.5 g/ ..
T <sub>16</sub>	Carbofuran	0.5 g/ ..
T <sub>17</sub>	..	1.0 g/ ..
T <sub>18</sub>	..	1.5 g/ ..
T <sub>19</sub>	Control	

Results of the study showed that five per cent metaldehyde bait and metaldehyde mixed carbaryl bait (2.5-2.5%) brought the highest mean mortality within 24 hours of treatment and

within 48 h of treatment highest mean mortality of 55.55 per cent was obtained with metaldehyde mixed carbaryl bait (2.5-2.5%) and

1.5g phorate. Ruppel (1950) had reported that baits of carbaryl mixed with metaldehyde are highly effective against the grey garden slugs.

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### References

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