Intensity of anar butterfly *Virachola isocrates* (Fabr.) with period and crop means

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Abstract

Guava is a popular fruit crop but several insect pests easily damage the crop. Guava is mainly a crop of U.P. where it is used in large amount by all classes of the society. Anar butterfly (*Virachola isocrates* Fabr.) is found throughout the year except May and June. Data recorded on the population of oriental fruit fly larvae in period, period x crops, months, crops and month x crops were summarized. Among the 40 periods of population of *Virachola isocrates* was found the highest (35.600 per unit) in 3rd week of September and it was followed by 32.219 in the 3rd week of August, 28.285 in the 2nd week of September and 27.180 in the 4th week of August, 28.285 in the 2nd week of September and 27.180 in the 4th week of December. The minimum population was observed in the 4th week of November i.e. of population 10.794 per unit, respectively. In fact this showed a great range of variation. It was very apparent that population fluctuation varied from September to November.

Keywords: Infestation, Guava, orientation fruit fly.

INTRODUCTION

Guava is widely grown in India but mainly major insects pests cause damage to this crop. Caterpillars of *Virachola isocrates* (Fabricius) is found to bore into the fruits and feed on the developing seeds and tissues. In this insect its population also occur inside the fruits. These entry holes facilitates the attack of bacteria and fungi, causing ultimately rotting of the fruits.

Guava trees grow rapidly and fruit in 2 to 4 years from seed. They live 30 to 40 years but productivity declines after 15th year. Orchards may be rejuvenated by drastic pruning. The tree is drought tolerant but in dry regions lack of irrigation during the period of fruit development will cause the fruits to be deficient in size. The fruit matures 90 to 150 days after flowering. Guavas kept at room temperature in India are normally overripe and mealy by the 6th day, but if wrapped in pliofilm will keep in good condition for 9 days. In cold storage, pliofilm wrapped fruits remain unchanged for more than 12 days. Wrapping checks weight loss and preserves glossiness. Unwrapped 'Safeda' guavas just turned yellow, have kept well for 4 weeks in cold storage at 47o to 50oF (8.33o-10oC) and relative humidity of 85.95% and were in good condition for 3 days thereafter at room temperature of 76° to 87°F (24°-44°C).

MATERIAL AND METHODS

The present investigations were carried out at D.G. College, Kanpur and River bed area of Bithoor, Kanpur over four insect pests during 2003 and 2004. The texture of experimental soil was sandy loam, well drained with medium fertility The fields were well manured and have uniform cultural practices.

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EXPERIMENTAL FINDINGS

Data of the observation revealed that in case of variety mean it was found that the Apple colour Guava showed maximum infestation and its population was found 23.980 per unit which was followed by 23.016 in Allahabad Safeda, 20.401 in Lucknow-49, 19.350 in Red Flesh and 19.022 in Local Seedling during period of investigations. Period x variety showed the maximum population 39.994 per unit in Local seedling during 3rd week of September. In case of period x variety, maximum population was found 39.924 in 3rd week of September in Local Seedling. However in 3rd week of July 39.319 per unit in Allahabad Safeda, August 3rd week and July 1st week both 37.655 per unit in Allahabad Safeda revealed statistically at par results during period of investigations. Variety Red Flesh and Lucknow-49 was revealed statistically different population. This showed that insect gave preference to the variety and environmental factors experiments which were responsible for the population fluctuations.

RESULT AND DISCUSSION

Among the 40 periods of population of *Virachola isocrates* was found the highest in 3rd week of September and followed by 3rd week of August and 2nd week of September. In the variety mean, Apple colour variety revealed maximum population, followed by Allahabad Safeda, Lucknow-49 and Red Flesh Variety.

In case of period x variety, maximum population was found in 3rd week of September in Local Seedling. However, in 3rd week of July, Allahabad Safeda showed maximum population. Red Flesh variety and Lucknow-49 variety revealed statistically at par results. This showed that insect pest gave preference to the variety and environmental factors which were found responsible for the population fluctuations.

Table. Intensity of *virachola isocrates* (Fabr.) with period and period x crops means

	Allahabad Safeda	Lucknow-49	Apple colour	Red flesh	Local Seeding	Period mean
Jan. I	0.462 (19.840)	0.354 (12.003)	0.462 (19.840)	0.466 (20.185)	0.452 (19.095)	0.439 (18.070)
II	0.495 (22.536)	0.388 (10.987)	0.511 (23.923)	0.471 (20.548)	0.479 (21.277)	0.459 (19.605)
III	0.572 (29.329)	0.388 (14.311)	0.572 (29.301)	0.638 (35.494)	0.471 (20.552)	0.528 (25.399)
IV	0.556 (27.890)	0.419 (16.516)	0.657 (37.331)	0.568 (28.932)	0.393 (14.644)	0.519 (24.565)
Feb. I	0.597 (31.644)	0.450 (18.908)	0.5 14 (24.156)	0.448 (18.771)	0.402 (15.320)	0.482 (21.510)
II	0.579 (29.904)	0.419 (16.516)	0.492 (22.300)	0.515 (24.239)	0.371 (13.159)	0.475 (20.914)
III	0.610 (32.859)	0.589 (30.875)	0.537 (26.164)	0.441 (18.247)	0.335 (10.832)	0.503 (23.208)
IV	0.557 (27.985)	0.642 (35.864)	0.601 (31.981)	0.465 (20.131)	0.453 (19.184)	0.544 (26.774)
March I	0.475 (20.927)	0.577 (29.791)	0.542 (26.630)	0.531 (25.627)	0.475 (20.927)	0.520 (24.700)
II	0.458 (19.532)	0.441 (18.247)	0.441 (18.247)	0.512 (23.972)	0.512 (23.981)	0.473 (20.735)
III	0.422 (16.762)	0.499 (22.887)	0.501 (23.073)	0.353 (11.966)	0.557 (27.985)	0.467 (20.226)
IV	0366 (12.777)	0.436 (17.849)	0.657 (37.286)	0.427 (17.131)	0.544 (26.788)	0.486 (21.806)
April I	0.475(20 (20.927)	0.411 (15.964)	0.542 (26 630)	0.478 (21.127)	0.442 (18.317)	0.470 (20.482)
II	0.619 (33.640)	0.434 (17.692)	0.444 (18.428)	0.531 (25.598)	0.542 (26.630)	0.514 (24.161)
III	0.522 (24.862)	0.501 (23.071)	0.490 (22.106)	0.433 (17.619)	0.438 (17.971)	0.477(21.053)
IV	0.461 (19.811)	0.485 (21.730)	0.441 (18.247)	0.456 (19.411)	0.503 (23.249)	0.469 (20.461)
July I	0.661 (37.655)	0.479 (21.278)	0.605 (32.317)	0.400 (15.186)	0.529 (25.455)	0.535(25.974)
II	0.608 (32.643)	0.433 (17.619)	0.650 (36.631)	0.474 (20.800)	0.563 (28.441)	0.546 (26.919)
III	0.678 (39.319)	0.539 (26.378)	0.516 (24.367)	0.527 (25.261)	0.467 (20.295)	0.546(26.917)
IV	0.554 (27.651)	0.370 (13 .090)	0.542 (26.630)	0.420 (16.629)	0.433 (17.635)	0.464 (20.021)
Aug. I	0.590 (30.963)	0.366 (12.777)	0.567 (28.811)	0.391 (14.495)	0.375 (13.381)	0.458 (19.507)
II	0.549 (27.270)	0.462 (19.899)	0.657 (37.250)	0.466 (20.146)	0.371 (13.159)	0.501 (23.069)
III	0.661 (37.655)	0.605 (32.317)	0.782 (49.666)	0.499 (22.935)	0.471 (20.612)	0.604 (32.219)
IV	0.551 (27.369)	0.600 (31.881)	0.545(26.878)	0.626 (34.294)	0.378 (13.600)	0.540 (26.414)
Sep. I	0.505 (23.400)	0.433 (17.619)	0.497 (22.715)	0.562 (28.420)	0.475 (20.927)	0.495 (22.520)
II	0.626 (34.294)	0.518 (24.553)	0.475 (20.927)	0.626 (34.298)	0.559 (28.122)	0.561 (28.285)
III	0.678 (39.319)	0.661 (37.643)	0.615 (33.292)	0.559 (28.094)	0.685 (39.994)	0.639 (35.600)
IV	0.457 (19.485)	0.502 (23.153)	0.476 (21.033)	0.429 (17.299)	0.507 (23.564)	0.474 (20.857)
Oct. I	0.346 (11.506)	0.428 (17.207)	0.575 (29.565)	0.219 (4.722)	0.295 (8.448)	0.373 (13.248)
II	0.476 (21033)	0.433 (17619)	0.424 (16.892)	0.267 (6.978)	0.386 (14.180)	0.397 (14.973)
III	0.482 (21.454)	0.512 (23.981)	0.367 (12.887)	0.393 (14.644)	0.347 (11.530)	0.420 (16.622)
IV	0.438 (17.971)	0.529 (25.490)	0.350 (11.754)	0.287 (7.991)	0.329 (10.444)	0.387 (14.211)
Nov. I	0.296 (8.508)	0.550 (27.345)	0.404 (15.427)	0.285 (7.923)	0.392 (14.581)	0.385 (14.133)
II	0.393 (14.644)	0.378 (13.642)	0.401 (15.199)	0.339 (11.067)	0.419 (16.565)	0.386 (14.171)
III	0.387 (14.273)	0.316 (9.630)	0.273 (7.286)	0.386 (14.180)	0.363 (12.606)	0.345 (11.442)
IV	0.370 (13.050)	0.247 (5.974)	0.279 (7.597)	0.368 (12.919)	0.410 (15.917)	0.335 (10.794)
Dec. I	0.296 (8.508)	0.401 (15.246)	0.422 (16.799)	0.385 (14.090)	0.392 (14.605)	0.379 (13.708)
II	0.397 (14.963)	0.406 (15.588)	0.523 (24.970)	0.471 (20.612)	0.357 (12.194)	0.431 (17.443)
III	0.463 (19.975)	0.551 (27.448)	0.583 (30.271)	0.520 (24.661)	0.537 (26.124)	0.531 (25.618)
IV	0.328 (10.364)	0.643 (35.938)	0.539 (26.306)	0.590 (30.963)	0.643 (35.938)	0.548 (27.180)
Variety mean	0.500 (23.016)	0.469 (20.401)	0.512 (23.980)	0.456 (19.350)	0.451 (19.022)	

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