

**Table- I**

**Number of instars and respective stadial period of *Trichoplusia ni* on cabbage leaves with different parameters calculated in Mgs/Ind/D on live weight basis**

<b>Instars</b>	<b>Sex</b>	<b>Stadial Period</b>	<b>Body Weight</b>	<b>Tissue Growth</b>	<b>Consumption</b>	<b>Egestion</b>	<b>Assimilation</b>
I	M	3.000±0.000	0.284±0.042	0.202±0.023	5.447±0.960	0.016±0.002	5.402±0.869
	F	3.000±0.000	0.253±0.028	0.160±0.019	5.342±0.716	0.017±0.002	5.324±0.719
	A	3.000±0.000	0.268±0.035	0.181±0.021	5.394±0.838	0.016±0.002	5.363±0.794
II	M	3.000±0.000	2.683±0.369	1.334±0.183	8.086±0.805	0.172±0.027	7.912±0.781
	F	3.000±0.000	2.568±0.314	1.321±0.154	8.408±0.838	0.158±0.023	8.291±0.832
	A	3.000±0.000	2.625±0.341	1.327±0.168	8.247±0.826	0.165±0.025	8.101±0.806
III	M	2.000±0.000	15.014±1.686	8.142±1.021	19.154±1.824	0.708±0.042	18.445±1.795
	F	2.000±0.000	13.810±1.232	7.073±0.642	17.703±1.146	0.627±0.003	17.071±1.120
	A	2.000±0.000	14.412±1.459	7.607±0.831	18.428±1.485	0.667±0.022	17.758±1.457
IV	M	2.710±0.034	44.554±5.027	15.088±3.742	50.875±9.557	6.008±1.274	46.523±9.024
	F	2.667±0.044	43.085±4.886	17.627±2.972	53.214±8.874	5.341±0.972	48.709±8.345
	A	2.688±0.039	43.819±4.956	16.357±3.357	52.044±9.215	5.674±1.123	47.616±8.684
V	M	3.000±0.000	160.400±16.160	56.090±9.527	139.237±23.225	21.170±4.339	124.792±23.451
	F	3.000±0.000	141.963±14.251	51.942±8.021	147.307±21.671	19.141±2.731	127.690±20.368
	A	3.000±0.000	151.181±15.205	54.016±8.774	143.272±22.448	20.155±3.535	126.241±21.909
VI	M	7.250±0.434	450.769±23.272	63.880±10.902	338.177±33.346	125.481±14.384	233.340±33.518
	F	6.000±0.533	436.772±16.992	53.401±8.513	321.005±22.642	126.967±10.914	192.931±21.737
	A	6.625±0.483	443.770±20.132	58.640±9.707	329.591±27.994	126.399±12.649	213.135±27.627

M=Male, F=Female, A=Average, ±=S.E. (Standard Error)

**Table- II**

**Number of instars of *Trichoplusia ni* on cabbage leaves with different parameters calculated in Mgs/Ind/D on dry weight basis**

<b>Instars</b>	<b>Sex</b>	<b>Body Weight</b>	<b>Tissue Growth</b>	<b>Consumption</b>	<b>Egestion</b>	<b>Assimilation</b>
I	M	0.024 $\pm$ 0.001	0.056 $\pm$ 0.001	0.620 $\pm$ 0.008	0.001 $\pm$ 0.002	0.653 $\pm$ 0.009
	F	0.024 $\pm$ 0.001	0.058 $\pm$ 0.002	0.614 $\pm$ 0.005	0.002 $\pm$ 0.003	0.621 $\pm$ 0.010
	A	0.024 $\pm$ 0.001	0.050 $\pm$ 0.001	0.617 $\pm$ 0.006	0.001 $\pm$ 0.002	0.637 $\pm$ 0.009
II	M	0.301 $\pm$ 0.010	0.234 $\pm$ 0.009	1.115 $\pm$ 0.080	0.017 $\pm$ 0.001	0.815 $\pm$ 0.009
	F	0.215 $\pm$ 0.013	0.238 $\pm$ 0.007	1.168 $\pm$ 0.067	0.015 $\pm$ 0.001	1.011 $\pm$ 0.018
	A	0.258 $\pm$ 0.011	0.232 $\pm$ 0.008	1.141 $\pm$ 0.073	0.016 $\pm$ 0.001	0.913 $\pm$ 0.013
III	M	1.862 $\pm$ 0.042	1.059 $\pm$ 0.078	2.834 $\pm$ 0.087	0.115 $\pm$ 0.009	1.401 $\pm$ 0.078
	F	1.683 $\pm$ 0.038	1.034 $\pm$ 0.092	2.655 $\pm$ 0.108	0.106 $\pm$ 0.008	1.460 $\pm$ 0.062
	A	1.772 $\pm$ 0.040	1.046 $\pm$ 0.085	2.744 $\pm$ 0.975	0.110 $\pm$ 0.008	1.430 $\pm$ 0.070
IV	M	5.926 $\pm$ 0.389	1.576 $\pm$ 0.087	8.394 $\pm$ 0.790	1.309 $\pm$ 0.086	3.349 $\pm$ 0.186
	F	5.645 $\pm$ 0.321	2.027 $\pm$ 0.068	8.950 $\pm$ 0.869	1.149 $\pm$ 0.047	3.799 $\pm$ 0.203
	A	5.785 $\pm$ 0.355	1.801 $\pm$ 0.077	8.672 $\pm$ 0.829	1.229 $\pm$ 0.066	3.574 $\pm$ 0.194
V	M	26.947 $\pm$ 2.973	12.004 $\pm$ 1.007	19.075 $\pm$ 1.186	6.245 $\pm$ 0.338	7.861 $\pm$ 1.089
	F	23.571 $\pm$ 2.200	9.870 $\pm$ 0.985	18.266 $\pm$ 1.983	5.378 $\pm$ 0.706	7.138 $\pm$ 1.190
	A	25.258 $\pm$ 2.586	10.937 $\pm$ 0.996	18.670 $\pm$ 1.584	5.811 $\pm$ 0.772	7.499 $\pm$ 1.139
VI	M	99.829 $\pm$ 5.809	11.245 $\pm$ 1.980	48.305 $\pm$ 3.876	34.256 $\pm$ 2.435	17.732 $\pm$ 1.086
	F	97.629 $\pm$ 4.871	12.559 $\pm$ 2.000	46.788 $\pm$ 2.920	37.709 $\pm$ 1.411	16.595 $\pm$ 1.605
	A	98.729 $\pm$ 5.340	11.902 $\pm$ 1.990	47.546 $\pm$ 3.398	35.982 $\pm$ 1.923	17.163 $\pm$ 1.345

M=Male, F=Female, A=Average,  $\pm$ =S.E. (Standard Error)

**Table- III**

**Number of instars of *Trichoplusia ni* on cabbage leaves with different parameters calculated in Calories/Ind/D on energy basis**

<b>Instars</b>	<b>Sex</b>	<b>Body Weight</b>	<b>Tissue Growth</b>	<b>Consumption</b>	<b>Egestion</b>	<b>Assimilation</b>
I	M	0.252 $\pm$ 0.016	0.214 $\pm$ 0.010	2.478 $\pm$ 0.184	0.006 $\pm$ 0.000	2.604 $\pm$ 0.108
	F	0.250 $\pm$ 0.010	0.185 $\pm$ 0.013	2.451 $\pm$ 0.201	0.007 $\pm$ 0.000	2.529 $\pm$ 0.103
	A	0.251 $\pm$ 0.013	0.199 $\pm$ 0.011	2.464 $\pm$ 0.192	0.006 $\pm$ 0.000	2.567 $\pm$ 0.105
II	M	2.571 $\pm$ 0.110	1.123 $\pm$ 0.076	4.382 $\pm$ 0.284	0.060 $\pm$ 0.003	3.378 $\pm$ 0.193
	F	2.451 $\pm$ 0.126	1.261 $\pm$ 0.089	4.557 $\pm$ 0.305	0.056 $\pm$ 0.004	3.540 $\pm$ 0.205
	A	2.511 $\pm$ 0.118	1.192 $\pm$ 0.082	4.469 $\pm$ 0.294	0.058 $\pm$ 0.003	3.459 $\pm$ 0.199
III	M	12.138 $\pm$ 0.985	6.026 $\pm$ 0.384	11.912 $\pm$ 0.697	0.359 $\pm$ 0.019	6.733 $\pm$ 0.366
	F	11.119 $\pm$ 0.848	6.039 $\pm$ 0.299	11.049 $\pm$ 0.782	0.319 $\pm$ 0.017	6.983 $\pm$ 0.295
	A	11.628 $\pm$ 0.916	6.033 $\pm$ 0.341	11.480 $\pm$ 0.739	0.339 $\pm$ 0.018	6.850 $\pm$ 0.330
IV	M	32.659 $\pm$ 2.980	12.070 $\pm$ 1.000	28.490 $\pm$ 1.891	4.812 $\pm$ 0.201	17.493 $\pm$ 1.001
	F	30.449 $\pm$ 1.816	14.100 $\pm$ 1.006	29.958 $\pm$ 1.465	4.231 $\pm$ 0.259	18.899 $\pm$ 1.006
	A	31.604 $\pm$ 2.398	13.085 $\pm$ 1.003	29.224 $\pm$ 1.678	4.521 $\pm$ 0.230	18.196 $\pm$ 1.003
V	M	109.072 $\pm$ 7.778	47.287 $\pm$ 2.088	74.213 $\pm$ 2.685	21.006 $\pm$ 1.889	40.807 $\pm$ 2.868
	F	102.376 $\pm$ 6.285	43.998 $\pm$ 2.000	69.971 $\pm$ 4.518	18.510 $\pm$ 1.683	35.963 $\pm$ 3.007
	A	105.624 $\pm$ 7.031	45.642 $\pm$ 2.044	72.092 $\pm$ 3.601	19.758 $\pm$ 1.786	38.385 $\pm$ 2.939
VI	M	605.328 $\pm$ 20.800	65.166 $\pm$ 2.689	181.314 $\pm$ 5.798	109.672 $\pm$ 4.110	84.936 $\pm$ 3.775
	F	582.698 $\pm$ 17.198	52.372 $\pm$ 3.090	181.346 $\pm$ 5.053	117.063 $\pm$ 3.875	81.772 $\pm$ 3.684
	A	594.013 $\pm$ 18.999	58.769 $\pm$ 2.889	181.330 $\pm$ 5.425	113.367 $\pm$ 3.992	83.354 $\pm$ 3.729

M=Male, F=Female, A=Average,  $\pm$ =S.E. (Standard Error)

**Table- IV**

**Analysis of different parameters of larval period per individual basis for *Trichoplusia ni* (Hubner)**

<b>Sex &amp; Period</b>	<b>Parameters</b>	<b>Body Weight</b>	<b>Tissue Growth</b>	<b>Consumption</b>	<b>Egestion</b>	<b>Assimilation</b>
Male I to VI (20.96 days)	L.W.	3530.208	758.416	2939.514	804.628	2286.809
	D.W.	706.818	137.151	420.997	219.781	166.689
	E.	3992.984	691.082	1587.138	712.194	817.183
Female I to VI (19.66 days)	L.W.	3137.986	646.440	2717.892	748.314	1966.079
	D.W.	632.889	126.738	385.538	218.024	150.517
	E.	3585.212	579.748	1476.201	689.014	735.707
On Average basis I to VI (20.31 days)	L.W.	3331.220	701.344	2828.046	777.243	2123.482
	D.W.	669.346	131.852	403.102	219.089	158.499
	E.	3786.449	634.276	1530.653	700.944	775.898

L.W.=Live weight basis, D.W.=Dry weight basis, All values in mgs, E=Energy basis, All values are in calories

**Table- V**  
**Percentage ecological efficiencies/Ind/D for *Trichoplusia ni* at each instar on live weight basis**

Instars	Sex	E.C.I.	E.C.D.	A.D.	G.R.	C.I.
I	M	4.728±0.562	4.765±0.565	99.623±0.034	0.507±0.014	13.038±1.306
	F	3.536±0.366	3.553±0.367	99.589±0.041	0.456±0.024	15.019±1.278
	A	4.132±0.464	4.159±0.466	99.606±0.037	0.481±0.019	14.028±1.292
II	M	23.686±4.952	24.416±5.116	97.715±0.262	0.485±0.037	5.092±1.061
	F	23.841±4.319	24.495±4.481	98.220±0.427	0.513±0.027	5.642±1.072
	A	23.763±4.635	24.455±4.798	97.967±0.344	0.499±0.032	5.367±1.066
III	M	40.722±1.589	42.578±1.589	96.045±0.271	0.531±0.112	1.313±0.037
	F	39.111±1.515	37.369±2.328	96.346±0.198	0.506±0.009	1.336±0.048
	A	39.916±1.552	39.973±1.958	96.195±0.234	0.518±0.060	1.324±0.042
IV	M	24.427±4.565	25.487±4.727	71.755±9.908	0.307±0.065	1.043±0.167
	F	26.158±4.886	28.402±5.303	73.221±7.590	0.331±0.053	1.060±0.133
	A	25.292±4.725	26.944±5.015	72.488±8.749	0.319±0.059	1.051±0.150
V	M	33.683±5.751	35.598±5.958	67.727±9.918	0.341±0.053	0.793±0.112
	F	27.945±5.042	30.064±5.306	67.829±8.131	0.312±0.046	0.898±0.120
	A	30.814±5.396	32.831±5.632	67.778±9.024	0.326±0.049	0.845±0.116
VI	M	14.224±3.061	15.341±3.176	53.008±6.478	0.136±0.028	0.665±0.064
	F	13.000±2.188	15.367±2.432	52.690±4.452	0.121±0.021	0.650±0.046
	A	13.612±2.624	15.354±2.804	52.849±5.465	0.128±0.024	0.657±0.055

M=Male, F=Female, A=Average, ±=S.E. (Standard Error), E.C.I.=Efficiency of conversion of ingested food, E.C.D.=Efficiency of conversion of digested food, A.D.=Approximate digestibility, G.R.=Growth rate, C.I. Consumption index

**Table- VI**  
**Percentage ecological efficiencies/Ind/D for *Trichoplusia ni* at each instar on dry weight basis**

Instars	Sex	E.C.I.	E.C.D.	A.D.	G.R.	C.I.
I	M	10.523±0.594	4.818±0.283	92.647±5.008	1.205±0.069	19.950±1.002
	F	7.164±0.485	5.325±0.329	87.120±4.698	0.956±0.048	23.400±1.688
	A	8.843±0.539	5.071±0.306	89.883±4.853	1.080±0.058	21.675±1.345
II	M	22.946±1.557	19.537±1.114	89.898±5.019	2.139±0.139	8.968±0.795
	F	23.125±1.697	17.143±1.002	92.327±4.485	2.182±0.189	12.464±0.988
	A	23.035±1.627	18.340±1.058	91.112±4.752	2.160±0.164	10.716±0.891
III	M	31.508±1.942	71.535±3.994	50.881±3.331	1.168±0.079	2.669±0.195
	F	32.067±2.000	65.396±3.848	53.927±3.911	1.422±0.098	2.456±0.186
	A	31.787±1.971	68.465±3.921	52.404±3.621	1.295±0.088	2.562±0.190
IV	M	20.191±1.001	46.743±2.101	39.383±2.888	0.848±0.032	1.324±0.073
	F	21.451±1.437	49.701±2.690	41.004±2.487	0.902±0.044	1.155±0.069
	A	20.821±1.219	48.222±2.395	40.193±2.687	0.875±0.038	1.239±0.071
V	M	37.698±2.754	80.076±4.686	31.698±1.999	0.583±0.205	0.800±0.043
	F	39.497±2.117	81.177±4.319	31.195±11.789	0.462±0.018	0.728±0.039
	A	38.597±2.435	80.626±4.502	31.446±1.894	0.522±0.111	0.764±0.041
VI	M	23.321±1.388	48.935±2.971	27.035±2.776	0.128±0.006	0.476±0.032
	F	22.225±1.330	50.823±3.002	30.408±2.819	0.108±0.007	0.456±0.020
	A	22.773±1.359	49.879±2.986	28.721±2.797	0.118±0.006	0.466±0.026

M=Male, F=Female, A=Average, ±=S.E. (Standard Error), E.C.I.=Efficiency of conversion of ingested food, E.C.D.=Efficiency of conversion of digested food, A.D.=Approximate digestibility, G.R.=Growth rate, C.I. Consumption index

**Table- VII**  
**Percentage ecological efficiencies/Ind/D for *Trichoplusia ni* at each instar on energy weight basis**

Instars	Sex	E.C.I.	E.C.D.	A.D.	G.R.	C.I.
I	M	4.653±0.276	8.679±0.519	98.602±8.887	1.188±0.097	8.060±0.800
	F	3.680±0.218	6.210±0.438	96.569±7.984	0.954±0.076	9.600±0.795
	A	4.166±0.247	7.444±0.478	97.585±8.435	1.036±0.086	8.830±0.797
II	M	28.168±3.301	31.258±2.172	94.779±6.988	2.153±0.217	3.870±0.297
	F	41.482±3.110	28.163±2.000	98.185±7.114	2.187±0.199	5.645±0.431
	A	34.825±3.205	29.710±2.086	96.482±7.051	2.170±0.208	4.757±0.364
III	M	59.338±4.999	60.058±5.984	59.521±5.012	0.786±0.071	1.222±0.071
	F	50.847±3.891	50.509±6.797	57.811±5.002	0.850±0.067	0.842±0.067
	A	50.092±4.445	55.508±6.390	58.666±5.007	0.818±0.069	1.032±0.069
IV	M	34.096±2.439	36.246±4.899	41.390±3.147	0.419±0.040	0.969±0.062
	F	34.007±2.994	38.058±3.322	43.934±3.882	0.538±0.037	0.668±0.057
	A	34.051±2.716	37.152±4.110	12.662±3.514	0.478±0.038	0.818±0.059
V	M	57.464±5.886	57.672±3.998	42.656±4.101	0.465±0.042	0.618±0.039
	F	48.913±4.943	61.271±4.988	40.685±3.939	0.407±0.038	0.503±0.038
	A	53.188±5.414	59.471±4.493	41.167±4.020	0.436±0.040	0.560±0.038
VI	M	48.933±4.883	45.621±4.948	29.681±3.401	0.197±0.021	0.285±0.018
	F	35.100±3.109	53.799±5.832	33.723±2.885	0.203±0.019	0.254±0.019
	A	42.016±3.996	49.710±5.390	31.702±3.143	0.200±0.020	0.269±0.018

M=Male, F=Female, A=Average, ±=S.E. (Standard Error), E.C.I.=Efficiency of conversion of ingested food, E.C.D.=Efficiency of conversion of digested food, A.D.=Approximate digestibility, G.R.=Growth rate, C.I. Consumption index

**Table- VIII**

**Percent mortality of *Trichoplusia ni* after treatment with endosulphan (35%EC)**

<b>S.No.</b>	<b>Conc. (ppm) X</b>	<b>Mortality (%) Y</b>	<b>Log X</b>	<b>Expected (Y)</b>
			2.53	0.00
1.	100	13.5	2	-37.99
2.	300	27.8	2.4771213	-4.06
3.	400	32.4	2.69897	11.71
4.	600	61.5	2.845098	22.10
5.	800	69.5	2.90309	26.22
6.	1000	92.8	3.0	33.11

**Table- IX**

**Percent mortality of *Trichoplusia ni* after treatment with acetone extract of *P. hysterophorus***

<b>S.No.</b>	<b>Conc. (ppm) X</b>	<b>Mortality (%) Y</b>	<b>Log X</b>	<b>Expected (Y)</b>
			2.31	0.00
1.	200	4.1	2.30103	-0.52
2.	500	13.4	2.69897	19.24
3.	1000	31.5	3.0	34.18
4.	2000	51.3	3.30103	49.13
5.	3000	59.6	3.4771213	57.88

**Table- X**

**Percent mortality of *Trichoplusia ni* after treatment with alcoholic extract of *P. hysterothorus***

<b>S.No.</b>	<b>Conc. (ppm) X</b>	<b>Mortality (%) Y</b>	<b>Log X</b>	<b>Expected (Y)</b>
			2.28	0.00
1.	200	4.6	2.30103	1.29
2.	500	18.5	2.69897	22.47
3.	1000	36.2	3.0	38.50
4.	2000	56.2	3.30103	54.53
5.	3000	65.2	3.4771213	63.91

**Table- XI**

**Relative toxicity of synthetic pesticide (endosulphan) and plant (leaf) extract of *P. hysterothorus* to *Trichoplusia ni***

<b>S.No.</b>	<b>Treatment</b>	<b>Regression equation</b>	<b>LC<sub>50</sub></b>	<b>Relative toxicity</b>
1.	Endosulphan	$Y = -149.415 + 75.607X$	434.02	4.80
2.	<i>P. hysterothorus</i>			
	(a) Acetone leaf extract	$Y = -114.78 + 49.65X$	2082.23	1.00
	(b) Alcoholic leaf extract	$Y = -121.23 + 53.244X$	1644.15	1.27