

*Callosobruchus maculatus* (Fab)  
(Bruchidae : Coleoptera)

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**Abstract**

*Callosobruchus maculatus* (Fab) is considered one of the important agricultural pests that infests legumes in general and especially cowpea and chickpea resulting devastating damages to these yields. Thus, the aim of this study was to investigate the effect of microwave radiation with energy levels of 260, 520 and 780 Watt, within periods of exposure of 30, 60 and 90 seconds on hatching, mortality percentages and the life-span of this pest.

The percentage of mortality among the adults of *Callosobruchus maculatus* that have hatched from radiation exposed eggs was 96.6, 96.6, 90.0, 100.0, and 100.0 % for legume yield seeds, i.e. cowpea, chickpea, green pea, lentil and broad beans, respectively at the high levels of radiation energy 780 Watt for 90 seconds compared with a control trail of 6.6, 50.0, 33.3, 76.6, and 86.6 %, respectively.

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*Callosobruchus maculatus* (Fab.)

780 520 260  
90 60 30  
(%0 13.3 10.0 6.6 3.3)  
(

.(1) (%8 - 5.5)  
*Callosobruchus maculatus* (Fab)

.(2)

(3) Phillips  
(15 -1.8) (28)

( )  
( )

*Callosobruchus maculatus* Fab.

(Bruchidae: Coleoptera)

( 600)

(° 2 ± 30)

(4) (%5 ± 70)

2450 Microwave Oven

(1300)

(2450 MHZ)

30

780 520 260 ( )  
)

90 60

(

( )

600)

(1 × 5 × 4)

(

(60)

(5) (5)

(24 -1)

SAS

(6) Analysis of Variance (ANOVA Table)

2450

(1)

(90)

(760)

%3.3

%100

(7) Kirkpatrick

*Callosobruchus*

*maculatus*

:(1)

					( )	
30.00 ABC	80.00 A	30.00 BC	46.667 AB	60.00 C	30	270
36.667 AB	76.667 A	43.33 B	40.000 AB	56.667 C	60	
16.667 CD	63.333 A	26.667 BC	40.000 AB	36.667 D	90	
30.00 ABC	70.00 A	43.333 B	60.00 A	76.667 B	30	540
20.00 BCD	66.667 A	36.667 B	56.667 A	60.000 C	60	
13.333 CD	63.333 A	36.667 B	46.667 AB	6.667 F	90	
13.333 CD	66.667 A	40.00 B	46.667 AB	56.667 C	30	760
13.333 CD	66.667 A	23.333 BC	30.0 B	23.333 E	60	
0.00 D	13.333 B	10.00 C	6.667 C	3.333 F	90	
43.333 A	66.667 A	73.333 A	50.00 AB	100.00 A		

( 0.05 ≥ )

&

(2)

760 %90.0

%0

90

90

760

%100

(8) Major Bedi

%80.0

*C. chinensis*

*Rhizopertha dominica*

:(2)

					( )	
93.33 AB	83.333 AB	40.00 BCD	10.000 D	*0.00 C	30	270
93.33 AB	80.00 ABC	56.667 B	3.333 D	0.00 C	60	
93.33 AB	63.333 BC	60.00 EF	10.00 D	10.00 C	90	
90.00 AB	76.667 ABC	36.667 BCDE	16.667 CD	6.667 C	30	540
96.667 A	86.667 A	50.000 BC	50.00 B	3.333 C	60	
100.00 A	83.333 AB	56.667 DEF	63.50 C	30.00 B	90	
93.33 AB	80.00 ABC	20.00 DEF	30.00 C	0.00 C	30	760
96.667 A	83.33 AB	30.00 CDE	100.0 A	30.00 B	60	
100.00 A	96.667 A	100.00 A	100.0 A	90.00 A	90	
80.00 B	60.00 C	0.00 F	0.00 D	0.00 C		

\*

( 0.05 ≥ )



&

(4)

270

90

760

% 56.6

83.3 96.6

% 63.3

(2) Casagrande

*Tribolium onfusum*

*Tenebrio molitor*

:(4)

					( )	
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	30	270
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	60	
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	90	
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	30	540
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	60	
20.00 C	0.00 B	23.33 C	0.00 B	20.00 C	90	
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D	30	760
36.667 B	13.33 B	50.00 B	13.33 B	53.33 B	60	
63.33 A	56.667 A	83.33 A	56.667 A	96.667 A	90	
0.00 D	0.00 B	0.00 D	0.00 B	0.00 D		

\*

( 0.05 ≥ )

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