

*Comparison of the Efficiency of Some
Pesticides Against the White fly
Bemisia tabaci Genn - Amrasca
defastans Dist on the Cotton Plant
under the Field Conditions*

**مقارنة كفاءة بعض المبيدات ضد الذبابة البيضاء
Bemisia tabaci Genn-Amrasca defastans
والجاسيد على نبات القطن تحت الظروف الحقلية**



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Abstract:

The field study was carried out in the Ishaqi / Saladin Governorate during the agricultural season of 2015 to evaluate the efficacy of acetampride (ACelan 20% SL, Imidaclopride (Confidor 20% SL), Tiomethoxam (Actara 25 WG) against white fly *B. tabaci* and *B. jshida* Cotton.

The results showed that all pesticides recorded differences in the rate of killing of and *B. tabaci* and *A. defastans* after 24 hours and 48 hours of spraying. The thiomethoxam pesticide recorded the highest killing rate of 93.3% against the white fly *B. tabaci* Genn after 24 treatment, The results showed that the acetamide pesticide recorded the highest mortality rate of 88.5% against *A. defastans* Dist while the thymethoxam pesticide recorded the lowest kill rate of 46.6%. After 48 treatment, the temperature, humidity and wind speed did not affect the efficiency of the used pesticides. The results showed that the time factor had an increase or decrease in factor killing .

Introductions:

Cotton is considered an important field crop. Production is low in Iraq compared to the rest of the world. The insect pests cause the damage from the seed to maturity.

The white fly *B. tabcia* and *A. defastans* affect the absorption of the juice under the leaf and the composition of the honeycomb, where the black mold fungus grows and the end result affects the walnut of the plant. The white fly also affects the transfer of the leafworm virus(2).

Chemical control is one of the best ways to control these insects because of their high effects.(3). The indiscriminate use of pesticides has led to resistance to pesticides, pollution of the environment and health hazards. Wise use in time is very important for pesticide disposal(5).

Integrated management programs are the best way to combat any pest where chemical pesticides and growth regulators are used as well as the use of agricultural methods such as selection of resistant species and knowledge of some biological aspects of the pest. (6), resistance to pesticides may be shown by the white fly as a result of pesticide pressure(7).

This research aims to evaluate the efficacy of Acetampride (ACelan 20% SL, Imidaclopride (Confidor 20% SL), Tiomethoxam (Actara 25 WG) against *B. tabaci* and *B. jshida* on cotton plant during the 2015 season using the spray method.

Materials and methods:

A field study was carried out for one of the agricultural fields of Ishaqi in Salah El Din governorate for the agricultural season of 2015 under field conditions. The experimental land was divided into equal units consisting of 6 divisionlength of 5 m for each division and 75 cm between division and three replicates. The seed was obtained from a local market to spend a seeded country in Gore, about 25 cm in length, and used 2.5 x 3.5 m for comparison purposes using water, insects were adapted based on taxonomickeys

Acetampride (ACelan 20% SL, ImidacloprideConfidor 20% SL), Tiomethoxam (Actara 25 WG), were obtained from local markets and used a 100 liter spray for field use(7).

The average density of adult insects was recorded in the early morning 24 hours ago by selecting 12 randomly selected plants. The information was recorded by selecting a leaf in the upper third of the first plant, the third third of the second plant and the third third of the third plant. Thus, the plants were sprayed in a sprayed manner, On the leaves of the plants, then the numerical density was found after (24.48) hours for the adult insects in the same way, the percentage of the kill was then found by Abbott equation(9).

Use water for comparison purposes. All fertilization, regular irrigation was carried out during the study period. The total white fly and calcidite found on the cotton plant were used to determine the relationship or correlation with the temperature factors, the relative humidity measured by the nanometer and the wind speed by the anemometer

The results were statistically analyzed according to the full randomized multi-factor design (R.C.B.D). The results were compared using the DancansMutiple Range Test (DMRT) and below the probability level of 0.05(9).

Result and deussions:

All pesticides used in Table (1) caused a whitefly killing rate after 24,48 hours of treatment with the highest toxicity of 93.3%. While Acetambide and amidacloprid were recorded, 83.1% and 46.9% were killed respectively after 24 hours of

treatment. The results of the statistical analysis showed no significant differences between thiomethoxam and acetambide, while significantly different from amidoclde. However, the thiomethoxam and acetambide inhibitors had a similar effect. However, the acetamide pesticide has high solubility in water and is distributed in all parts of the seed T within the wood when used spray (10).

The temperature, humidity and wind speed have no effect on the efficiency of the pesticides used, and the results converge with what he found (11). The 10 m rise in temperature increases the reaction time by 2-4 times, which in turn helps in the destruction of pesticides.

Table 1. Effect of pesticides on adult white fly *B. tabaci* on the cotton plant after 24 and 48 hours of treatment

Treatment	Concentration ML	24h before spray		24h after spray		48h after spray		Average Treatment	Average Temperature		Average humidity%		Average wind Km/h	
		Numerical density of <i>B. tabaci</i>	Percentage%	Numerical density of <i>B. tabaci</i>	Percentage%	After 24h	After 48 h		After 24h	After 48 h	After 24h	After 48 h		
													100	100
Acetampride		20.4 a	3.3 c	83.1	5.7 c	72.1	9.8 D	22	17	36	39	8	3	
imidactopride		20.6 a	10.4 b	46.9	12.6 c	38.2	14.5 B	19	15	25	44	7	4	
Thiomethoxam		19.9 a	1.3 d	93.3	3.3 b	83.8	8.1 D	22	12	37	36	5	3	
Control	Nil	21.3 A	5.0 A	000	7.2 A	000	10.2	18	17	38	37	6	3	

*Similar letters in one row mean no significant differences.

* The large letters similar in the column mean no significant differences

All pesticides used in Table(2) caused a kill rate of A. defastans after 24,48 hours of treatment. The acetamide pesticide recorded the highest killing rate of 88.8% while the

amydacloprid pesticides, thiomethoxam, killed 87.9% and 37.4%, respectively, after 48 hours of treatment. The results showed that there was a significant effect of the time factor on the increase or decrease of the killing rate, where the killing rate was high after 48 hours, while it was low after 24 hours. The results showed that there was a significant difference between the used pesticides, acetamabide and amidacloprid which had a similar effect. Of the transaction The results converge with (6) that the time factor has an effect on the murder rate (Figure 2).

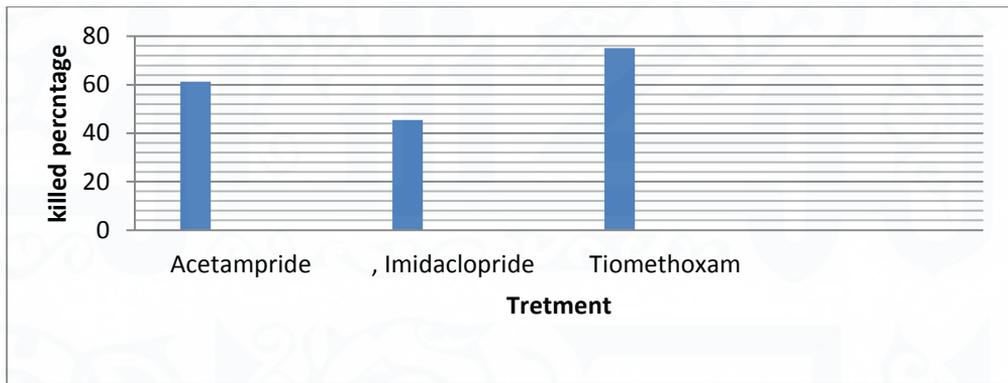
The temperature, humidity and wind speed have no effect on the efficiency of the pesticides used, and the results converge with what he found (11). The 10 m rise in temperature increases the reaction time by 2-4 times, which in turn helps in the destruction of pesticides.

Table 2. Effect of pesticides on *A. defastans* after 24, 48 hours of treatment.

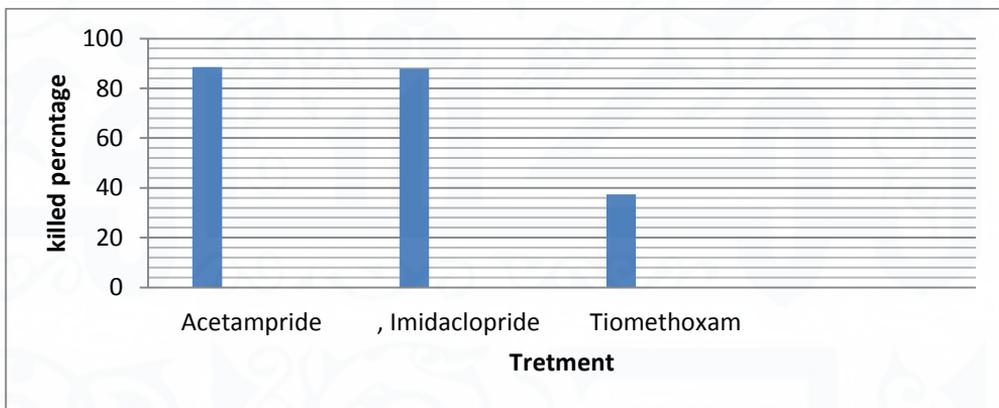
Treatment	Concentration MIL	24h before spray		24h after spray			Average Treatment	Average Temperature		Average humidity%		Average Wind Kih	
		Numerical density of <i>A. defastans</i>	Numerical density of <i>A. defastans</i>	Percentage%	48h after spray			After 24h	After 48 h	After 24h	After 48 h	After 24h	After 48 h
					Numerical density of <i>A. defastans</i>	Percentage%							
Acetampride	100	37.4 a	14.4 c	61.3	4.2 e	88.5	18.7 DE	20	18	35	34	4	3
imidaclopride		38.5 a	20.3 b	45.5	4.4 e	87.9	21.1 BC	19	12	22	4	2	5
Thiomethoxam		39.1 a	9.3 d	75.1	22.9b	37.4	23.7 B	24	11	32	32	4	2
Control	Nil	38.3 A	14.7 B	000	10.5 B	000	21.5 B	17	19	36	31	3	2

*Similar letters in one row mean no significant differences.

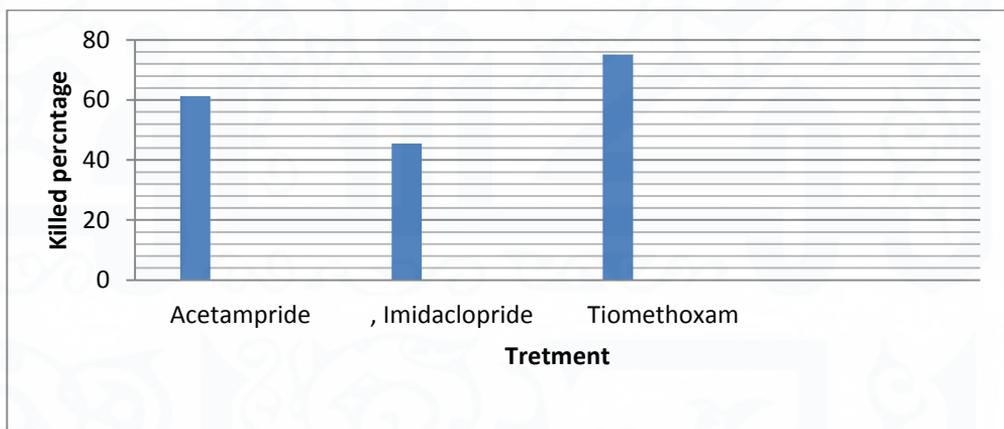
* The large letters similar in the column mean no significant differences



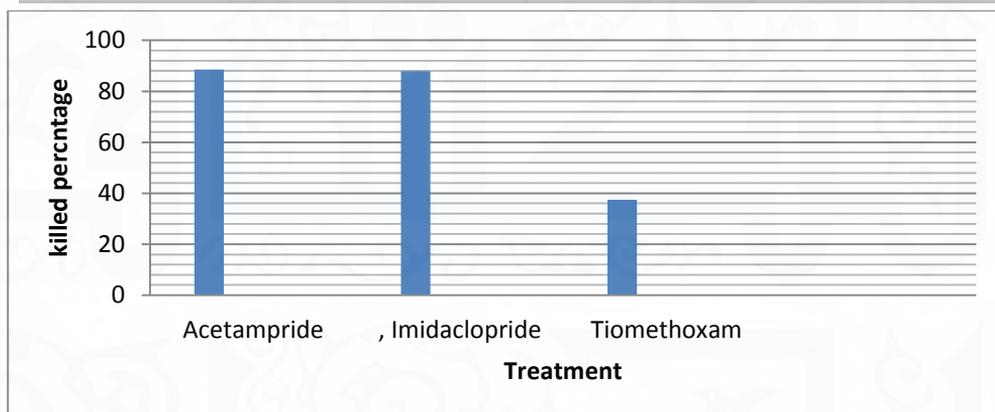
Figure(1):effect of pesticides on *B .tabacchia*after 24h from tretment.



Figure(2):effect of pesticides on *B .tabacchi* after 48h from tretmen



Figure(3):effect of pesticides on *A.defastans* after 24h from treatment.



Figure(4):effect of pesticides on *A.defastans* after 48h from tretmen

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