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Estimation of maize damage caused by *Corvus corone sardonius* in Sheben Al-kom Menofiya governorate

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ABSTRACT

This work was done over two years (2009, 2010) to detect the adverse effects of *crows* on maize and study their abundance in maize cultivated area. I choose ten Fadden planted with maize. Out of those, I used thirty plants of random out of ten rows at various locations. I counted total number of corn ears on those plants, and determined total number of damaged ears to calculate percentage of damage and recorded. Furthermore, I counted number of crows and their nests. Nests dimensions and contents were determined.

The results reflect the extent of *crow's* damage to reach 3.01% up to 3.16 % in the studied fields. Nests are presented in highest trees. They consisted of thick branches, leaves and paper and lined with soft materials.

Nests have length ranging from 18 to 30 cm. whereas their width appeared to be 32.5 cm as a mean

Moreover numbers of crows are different according to various months and year. It is appeared to be 33.10, 30.00, 36.45 in May, June, and July in 2009 year respectively.

However they appeared to be 17.05, 10.65, 14.90 in May, June, and July respectively in year 2010.

Keywords: maize damage- *Corvus corone sardonius* **-** Menofiya governorate

INTRODUCTION

Courvs Corone is considered as natural enemies to harmful insects when they feed on them in considerable amounts.

Now, it is one of birds that turning into agricultural pests. They cause damage to the economical crops such as maize, wheat, and sun flower .Infact, *crow* damage to cereal crops represents a serious problem as the losses reach up to 5-10% of the yield (EL-Deeb1991).

Furthermore, crows eat smaller animals and even creature that are already dead. They feed on them and can kill for food for their survival. Crows can cause serious problems when located in towns or places near people. This usually happen because of the odor of the bird droppings, noise and damage to trees. Moreover, they present in or near agricultural land they cause serious damage to the economical crops.

Therefore, I conducted this research to determine the damage caused in Shebin Elkom by *Corvus corona* in maize fields. I studied over two years (2009and2010) and used ten Fadden of maize at maturation stage.

MATERIAL AND METHODS

We determined the damage caused by *Corvus corona* in cultivated corn field over two cultivated seasons 2009 and 2010. at random.

We used ten rows of each Fadden to count damaged ears at the end of maturing stage.

We choose thirty plants at random out of each row and counted total ears and damaged ones.

We determined the percentage of damaged ears using the following equation (Hamelink J. 1981)

Damage%= (damaged ears / total of counted ears) ×100

We counted the number of crows that present during various maturing stage Dough and mature ripening stage sowing stage.

Numbers of nests (empty or having eggs) were counted over two studied years.

Mean number of counted nests were recorded at different times of study.

We studied the nest diminution and contents, and their places. Over different seasons (winter, spring, summer and autumn).

In This study I tried to detect the loss of maize crops yield in ten Fadden I choose them at random that is *Corvus corene* in one location in Mnofiya Governorate

For two seasons 2009, 2010.

This was done at the repining time of the yield I took sample from ten rows (at random) in each Fadden. at various location.

Out of 30 plants per every rows and counted number of ears. They were classified as harmed by *Corvus corona* or none harmed.

Furthermore I studied *Corvus's* nest as their contents and site of presence .this was done, in addition to the time of there presence in large numbers.

Number of crows were counted during four different seasons and used to study the relationship between the tenacity of corn damage and *crow's* number. We determined the number of crows during studied period.

RESULTS AND DISCUSSION

Numbers of corn's ears were counted out of 10 Fadden. 30 plants were chosen at random.

Data presented in table (1) clearly show the percentage of corn ear damage by crow at maturity stage. There were no variations in damage percentage over the tow studied years.We consider this percentage is very high. Infact my result are in agreement with what (Hassan2009) reported about crows damaging effect in maize crop in both seedling and repining stage.

Table 1: Mean number and damage percentage of corn ears over two studied years

year	2009	2010
Total number of ears	3589	3321
Damaged ears	108	105
Percentage of damage	3.01%	3.06%

Furthermore, (Besser and Brody1982) reported that the percentage of damages ears during 1981 seasons was 2.2.

In fact amount and degree of damage to agriculture is highly variable from place to place and year to year. Several variables enter into the complex picture of crow damage, including seasons, local weather, time of harvest and amount of crop production (Johnson 2012).

Table 2: Mean number and damage percentage of corn ears over year 2009

#of Fadden	# of ears non damaged	Damaged
1	369	6
2	359	12
3	346	13
4	347	6
5	384	16
6	393	12
7	372	10
8	330	15
9	352	10
10	337	8
total	3589	108

%of damage = (108/3589) ×100 = 3.01%

Table 3: Mean number and damage percentage of corn ears over year 2010

#of Fadden	# of ears non damaged	Damaged
1	336	11
2	338	16
3	343	16
4	343	14
5	349	11
6	340	07
7	317	07
8	322	07
9	310	09
10	323	08
Total	3321	105

%of damage = (105/3321) ×100 = 3.16%

Fig (2): illustrate damage extent of *crow* in some ears of corns. it is clear from the figure that there were no grains on the cop at all, However it there are some left, there were spoiled due to crow's eating.

I have to mention that crows damaged corn ears that planted in trifolium in January 2010 as it clear in the figure. My result agreed nicely with what Kham (2002). Reported that house crow was highest during March (as presented in table (4)).

Table (4): Number of Corvus on May, June and July during the different studied two years

Months /Years	2009			2010		
	1st count	2nd count	Mean#	1st count	2nd count	Mean#
May	37.8	28.4	33.10	18,8	15.3	17.05
June	29.8	30.2	30.00	11.1	10.2	10.65
July	36.2	36.7	36.45	14.2	15.6	14.90

#of *Corvus* of maturation #2009 #2010 Stage
Mean # o*f Corvus* during three month of maize growth

My result are in agreement with what Gade (2010) published. He stated that crows as ground feeder, they need open space for foraging. But they also need trees for nesting and roosting.

Fig (4): crows nest showing its contents. It consists of thick branches and twigs, rags, paper and bones.

Those are held together with mud and lined with soft material (grass, leaves and feathers). They were present on Casuarina trees and them at the highest branches of the trees.

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Fig. 1-1: *Crows* ate all grains after lifting husks in milky stage of maize repining

Fig. 1-2: Secondary infection to maize ears after *crows* ate all grains.

Fig.1-3: Normally and healthy ears

Fig.1: photograph to show ear's damage cased by Crows compared to normal un damaged ears

Fig.1: comparison between healthy, non damaged corn ears and that damaged by *crows*

Fig. 2: maize that planted in January 2010 in trifolium. It appeared that they have been attacked by crows as well

Fig. 3: showing *crow* as studied bird causing harmful effects in agriculture fields.

Fig. 4: photograph of crow's nests

ARABIC ABSTRACT

تقدير الاضرار في الذرة الناجمة عن الغراب *Corvus corone sardonius* في شبين الكوم بمحافظة المنوفية

ايمان عبدالرازق عبدالهادى احمد
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تم تنفيذ هذه التجربه على مدى عامين 2009و 2010 لتحديد التاثيرات الضاره للغراب على الذره المزروع وكذالك تقدير عدد الغربان على مدى ثلاثة اشهر التى يتم فيها زراعه ونضج الذره (مايو-يونيه-يوليه)
تم اختيار عشرة افدنه مزروعه بالذره واستخدم عشرة خطوط من كل فدان وتم تسجيل البياتات على ثلاثين نبات عشوائيا فى هذه الخطوط .
تم حصر العدد الكلى للكيزان – وحصر عدد الكيزان التالفه من اثر الغراب وحساب نسبه هذا التلف .
ايضا تم حصر عدد الغربان فى ثلاثة اشهر مايو- يونيه- ويوليه وكذالك حصر عدد الاعشاش وتحديد مكوناتها وقياس ابعادها .
اوضحت الدراسه ان الغراب يسبب نسبه تلف فى المحصول يصل الى 3.1 الى 3.16 فى المائه من المحصول الكلى – واوضحت كذالك ان اعشاش الغراب تكون فى اعلى وضع على الاشجار وتتكون من افرع واوراق الشجر ومبطن بمواد ناعمه . اتضح ان طول العش يتراوح من 18 الى 30 سم والقطر32.5 سم كمتوسط للقياسات .
اتضح ان عدد الغربان تختلف باختلاف شهر الدراسه وكذلك العام الذى تمت فيه الدراسه .
ففى شهر مايو ظهرت بمتوسط 33.1 فى عام 2009 و 17.05 فى عام 2010 بينما فى شهر يونيه كان العدد 30 فى عام 2009 و10.65 فى عام 2010 وفى شهر يوليه سجلت 36.45 فى عام 2009 مقارنه 14.9 في عام 2010.