

**Research Article**
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## Seasonal Abundance of Fly Species in the Animals Farm of the Faculty of Agriculture, Sohag University, Sohag Governorate, Egypt

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**ABSTRACT**

The present study was carried out in the Faculty of Agriculture, Sohag University, Sohag Governorate, Egypt during 2018-2019. The results recorded that the spring season was the most suitable for the activity of flies in different species, followed by summer, then autumn, and then the population decreased during the winter season. The incidence rates of flies were recorded as follows: 47.1, 30.1, 16.1 and 6.7% during spring, summer, autumn and winter respectively. These differences in the numbers of flies during the different seasons are mainly due to climate change, especially temperature. The house fly was the most common species found in Farm throughout the year by 69.7%, while the rest of the species ranged from 4.1 to 10.9% during 2018. The same trend of results was recorded on the same farm in 2019. These results are useful for determining the time of fly control programs in animal farms.

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**Introduction**

Fly are a group of insects that belong to one of the most abundant species, the order Diptera, which is the suborder Cyclorhapha. Members of this group are the most important carriers of infectious diseases. This fact illustrates its importance for human, animal and societal hygiene. The more serious the problem with the increase in the number of these insects and the veterinary or medical harm. This aspect of harm to flies is very evident in stock farms, where, along with their carrier role, they are the biggest predators. While searching for a feeding place and a place to lay eggs, flies disturb the animals, which leads to aggressive behavior, reduced milk production, poor growth and a negative economic impact.

Besides, the importance of flies stems from the fact that they often come into contact with pathogenic fungi, bacteria and viruses, and thus carry infectious diseases such as dysentery, anthrax and various types of conjunctivitis. The role of the carrier is particularly important in the case of bloodsucking flies such as *Stomoxys calcitrans*. For all the mentioned reasons, control of flies is of great importance in animal production, but also in general hygiene. Warehouse farms are very suitable habitats for flies because the microclimate is suitable for rapid and abundant development. Large amounts of substrate for egg laying and larval development, as well as non-resistant control measures, lead to a greater abundance of these pests [1].

The house fly, *Musca domestica* (L) and the sedentary fly, *Stomoxys calcitrans* (L) are common pests of livestock farms.

Both types develop in decomposing compost or other decomposing organic matter, and both can cause significant nuisance problems to animals, farm operators, and neighbors during the fly season. In particular, the sedentary blood-swallowing fly can affect animal welfare and lead to reduced weight gain in beef cattle and milk production from dairy cows when the animals remain unprotected [2-4]. The study aims to identify the types of flies in animal production farms and the extent of their seasonal activity.

**Materials and Methods**

Survey and seasonal abundance of flies were done in animal production farm of the Faculty of Agriculture, Sohag University during 2018-2019. Samples of three replicates were taken fortnightly during winter season and three times per month in the rest seasons using sweeping net (80 cm in diameter), the net was provided with a white gauze bag. Samples were preserved in plastic bags, and then taken to the laboratory for examination, counting and identification by using certain illustrated keys.

**Results and Discussion**

Data in Table (1) and the corresponding figure (1) show the seasonal abundance of the collected fly species from the animal's farm of the Faculty of Agriculture, Sohag University, during 2018. The results recorded that, spring season was the most suitable one for flies activity in different species, followed by summer, then autumn and the population decreased during winter season. The percentages of the occurrence of flies were recorded as: 47.1, 30.1, 16.1 and 6.7 % during spring, summer, autumn and winter, respectively. These differences in fly populations during different seasons are due mainly to climatic changes, especially temperature. The house fly was the most common species in the

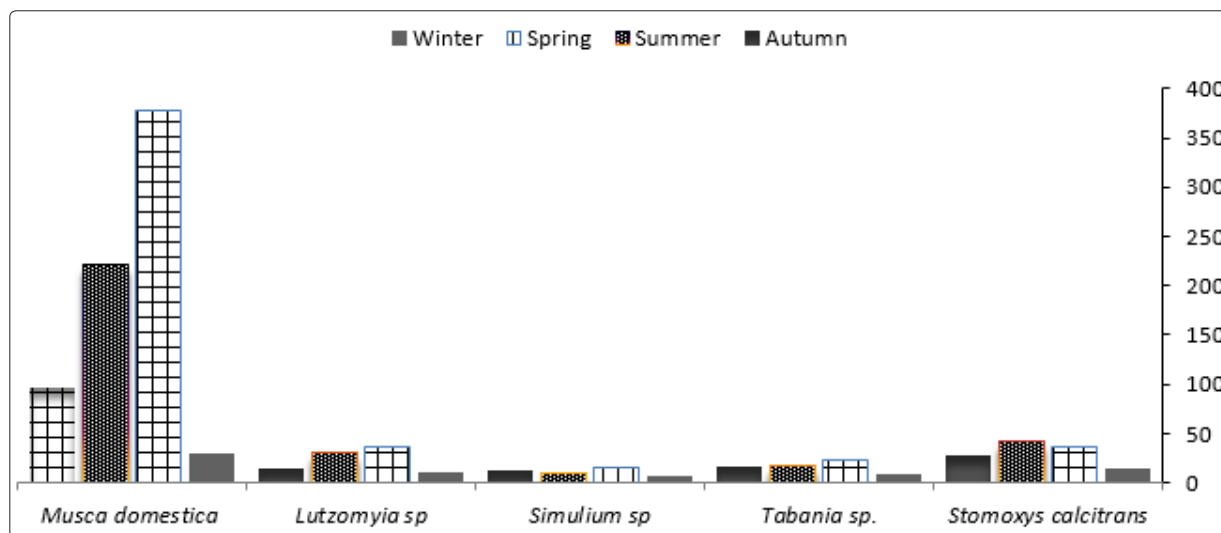
farm throughout the year, with a percentage of 69.7%, while the rest of the species ranged from 4.1 to 10.9% in Table (1) and figure (1) during 2018. The same train of results was recorded at the same farm in 2019 (Table 2 and Figure 2).

The results agreement with data obtained by surveyed 28 non-biting fly species pertaining to ten families in four studied areas at Giza and Qalubiya Governorates [5]. Author gave complete description to the distribution and abundance of various species of flies. While, recorded thirteen fly species in animals' farm of the Faculty of Agriculture, Assiut University. recorded six fly species in the latter farm belonging to four families, these species were identified as follows: *Musca domestica* Macq; *Muscina canicularis* Wied; *Stomoxys calcitrans* L.; *Tabania* sp.; *Sarcophaga* sp. and *Phormia regina* Meig [6, 7].

The house fly, *Musca domestica* Macq was collected from the animals' farm in high numbers all over the year as compared with the rest species. The stable fly, *Tabania* sp. was recorded only in buffalo sheds, *Stomoxys calcitrans* was collected with considerable numbers from the buffaloes and cattle farms. *Sarcophaga* sp. and *Phormia regina* were recorded in comparatively low numbers through the year [8]. found that, adult stages of flies found in animal production farms were: *Musca domestica*, *Muscina conicularis*, *Stomoxys calcitrans*, *Tabania* sp, *Sarcophaga* sp, and *Phormia regina* in addition to a single of mosquitoes, *Culex* sp. The animal body surfaces were suffered with infestation of certain pests (i.e., lice, fleas and ticks).

**Table 1: Seasonal abundance of fly species in the animals farm of the Faculty of Agriculture, Sohag University during 2018**

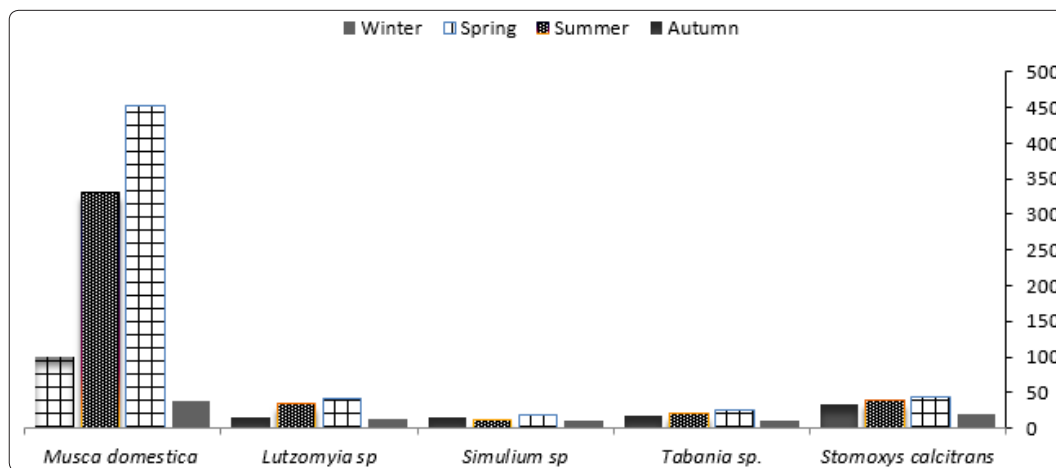
Season	<i>S. calcitrans</i>	<i>Tabania</i> sp.	<i>Simulium</i> sp.	<i>Lutzomyia</i> sp.	<i>M. domestica</i>	Total	%
Winter	15	8	7	10	30	70	6.70
Spring	37	23	15	37	377	489	47.1
Summer	34	18	9	30	221	312	30.1
Autumn	27	17	12	15	96	167	16.1
Total (%)	113 10.9	66 6.4	43 4.1	92 8.9	724 69.7	1038	-



**Figure 1: Seasonal abundance of fly species in the animals farm of the Faculty of Agriculture, Sohag University during 2018**

**Table 2: Seasonal abundance of fly species in the animals farm of the Faculty of Agriculture, Sohag University during 2019**

Season	<i>S. calcitrans</i>	<i>Tabania</i> sp.	<i>Simulium</i> sp.	<i>Lutzomyia</i> sp.	<i>M. domestica</i>	Total	%
Winter	20	10	10	13	38	91	7.04
Spring	45	25	19	42	453	584	45.17
Summer	40	20	12	35	330	437	33.80
Autumn	33	17	15	16	100	181	14.00
Total (%)	138 10.67	72 5.57	56 4.33	106 8.20	921 71.23	1293	-



**Figure 2:** Seasonal abundance of fly species in the animals farm of the Faculty of Agriculture, Sohag University during 2019

In general, from the results of this research, the most important fly species spread in animal production farms were identified. We also benefit from determining the time of control based on the period of activity of flies insects.

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