FEEDING HABITS OF SOME BIRDS (ORDER: PASSERIFORMES) IN DIFFERENT AGRICULTURAL HABITATS

By

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ABSTRACT

Norhan Ahmed Mohamed Ahmed: Feeding Habits of Some Birds (Order: Passeriformes) in Different Agricultural Habitats. Unpublished Ph.D. Thesis, Department of Plant Protection, Faculty of Agriculture, Ain Shams University, 2019

Passerine wild birds cause considerable damage for agricultural crops. The present work was, therefore, proposed to:1- define the most economic important passerine wild birds via an ecological survey, 2- assess the food consumption and food preference, by wild birds, under screenhouse condition, 3- clarify the distributional pattern of crop damage in mono-cropped cultivations, 4- assess and evaluate crop damage in concomitant cultivations and 5- develop an ecofriendly method, alongside other methods, for reducing crop damage by wild birds in under field conditions.

The ecological survey indicated that, house sparrows, *Passer domesticus niloticus,* and hooded crows, *Corvus corone cornix,* were the most noxious and prevalent passerine wild birds especially in old cultivated lands. The population numbers of these birds increased throughout Spring and Summer seasons and decreased during Autumn and Winter seasons 2015-2017. Correlation between ambient temperature or daylight and population numbers of both birds were varying between different years of survey. In addition, statistical analysis proved a significant difference in population numbers of both birds in cultivated crops.

As with food consumption and food preference by house sparrows and hooded crows, a monochoice and multichoice experiments were conducted under screenhouse conditions. The results indicated that, both birds consumed daily seeds and seedlings of soft wheat and hard wheat higher than those of barley and sunflower. Apparently, the amount of food consumption by hooded crow was higher several times than those of house sparrow. Generally, both birds were approximately similar in their

food preference, but not similar in their food consumption. These experiments confirmed that crop loss of seeds at postharvest stage and assured the seeding damage at early preharvest stage in fields by birds. To assess the distributional pattern of crop damage in monocrop cultivations at the farm of the Faculty of Agriculture, of Shalakan, two experiments were carried out in plots away from and adjacent to the nesting sites of house sparrows.

Obtained data revealed that crop damage in all tested cultivars located nearby the nesting sites (*i.e.* beside field borders) were comparatively higher than those in the central of the field. Therefore, any program of bird damage management must focus on borders to provide some protection.

For evaluating crop damage by house sparrows, a current experiment were conducted by growing varying cultivars adjacent to fixed cultivar. Obtained results proved that: sunflower could be grown nearby barley and soft wheat, but away from hard wheat; barley could be grown nearby sunflower or soft wheat, but away from hard wheat; soft wheat could be grown nearby sunflower, but away from hard wheat; hard wheat could be grown nearby barley or sunflower, but away from soft wheat.

For reducing crop damage by house sparrow under field conditions, concomitant cultivation by using lure crops alongside with ecofriendly methods, such as netting, avicidal repellent, metallic stripes, and scarecrow, were conducted. Obtained data stressed that: netting method was the most effective practice to prevent house sparrows damage, particularly, in combined cultivation by using sunflower as a lure crop which recorded the least crop damage at par; spraying Tukom (avicidal repellent) caused a highly protection to all tested crops; scaring methods by using stripes and scarecrow achieved less crop damage in soft wheat and hard wheat, but modestly damage to barley and sunflower. In this respect, maximum management of bird damage may be adopted with

combinable methods from lure crops, repellent avicide, netting, stripes and scarecrow to attain wide spectrum advantages.

Key words House sparrows, *Passer domescticus*, hooded crows, Soft wheat, hard wheat, sunflower, barley, Tukom.

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CONTENT

LIST OF TABLES

LIST OF FIGURES