Diversity of flowering crops (Bee flora) in M.S Swaminathan School of Agriculture, Centurion University of Technology and Management, Paralakhemundi, Odisha

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Abstract

The entitled research "Diversity of flowering crops (Bee flora) in MS Swaminathan School of Agriculture" was conducted at M. S. Swaminathan School of Agriculture in 2021 to analyze bee flora present inside the campus, excluding field crops, fruit crops, forest trees and non-floricultural horticultural plants. The present observation has concluded that the surrounding of this campus is enriched with numerous flowers belonging to 20 different families like Peregrina (*Jatropha integerima*), Moss Rose (*Portulaca grandiflora*), Marigold (*Tagetes erecta*), Silver cocks comb (*Celosia argentea*), Ramgoat dashalong (*Turnera ulmifolia*), Trumpet creeper (*Campsis radicans*), Golden Trumpet (*Allamanda cathartica*), Purple queen (*Tradescantia pallida*), China Rose (*Hibiscus rosasinensis*), Crown of thorns (*Euphorbia milii*), Phillipine ground orchid (*Spathoglottis plicata blume*), Fairy lily (*Zephyranthes rosea*) were found. Apart from these 12 flowers 20 other flowers were also found inside.

Introduction

M.S. Swaminathan School of Agriculture is located at Alluri village with post office at R. Sitapur present near Paralakhemundi with a Pin- 761211 in Gajapati district belonging to South Odisha. The school comes under the university "Centurion University of Technology and Management", Odisha. The livelihood of the district residents is primarily based on subsistence agriculture, forest produce, wage labor and distress migration. The district is grouped under "North Eastern Ghat Agro Climatic Zone" with light textured brown forest soil, which is highly acidic (98% of soils are acidic); the location of this district is confined to Longitude 83 degree 48' to 84 degree 7' E & Latitude18 degree 46' to 19 degree 9' N, between Gopalpur (Odisha) to Kalingapatanam (AP) within 48 km to 95 km from Seashore (Sea coast). The geographical situation of the district is characterized by undulated topography with hilly terrain where the rainwater is carried through hill streams & nallas in five tribal blocks (Panigrahi *et al.* 2021).

An investigation has been made to understand and record the diversity of horticultural flowering crops found in the M.S. Swaminathan School of Agriculture campus, which were grown by the Department of Horticulture (Floriculture) and some of the naturally grown flowers. A survey has been conducted during (2020-21) to assess the presence (composition) of different floricultural plants, which may encourage (playing a role in enhancing) the honeybees. The pictures of each and every flowering crops were taken and then identified by the Department of Horticulture, and some were identified by the use of Google lens images.

Materials and Methods

Extensive studies have been made on the presence of different floricultural plants present inside the campus of M S Swaminathan School of Agriculture during September 2020-January 2021. In the studies, diversity of different flowering plants present inside the campus were studied for future Apiary enrichment purpose.

Results and Discussion

The entitled research "Diversity of flowering crops (Bee flora) in M.S. Swaminathan School of Agriculture" conducted at M. S. Swaminathan School of Agriculture during 2021. The present observation has concluded that the surrounding of this campus is enriched with numerous flowers, including both natural and artificially grown flowers. But the current studies could not observe the forest flowering plants, which will be incorporated in future studies.

The present investigation observed about thirty-two different flowers present inside the campus, which is mentioned below in Table no. 1. The flowers were Peregrina (*Jatropha integerima*) belonging to family Euphorbiaceae, Moss Rose (*Portulaca grandiflora*) from family Portulacaceae, Marigold (*Tagetes erecta*) from Compositae, Silver cocks comb (*Celosia argentea*) from family Amaranthaceae, Ramgoat dashalong (*Turnera ulmifolia*) from family Passifloraceae, Trumpet creeper (*Campsis radicans*) from family Bignoniaceae, Golden Trumpet (*Allamanda cathartica*) from Apocyanaceae, Purple queen (*Tradescantia pallida*) from family Commelinaceae, China Rose (*Hibiscus rosasinensis*) from family Malvaceae, Crown of thorns (*Euphorbia milii*) from Euphoprbiaceae, Phillipine ground orchid (*Spathoglottis plicata blume*) from family Orchidiaceae, Fairy lily (*Zephyranthes rosea*) from family Amaryllidaceae have been found. Apart from the above-mentioned 12 flowers, 20 other flowering crops were also kept under investigation, which is mentioned below in Table No. 1.

Table No. 1 Diversity of flowering crops around the School campus, 2021

Sl. No.	Common Name	Scientific name	Family
1.	Peregrina	*Jathropa integerima*	Euphorbiaceae
2.	Moss rose	*Portullaca grandiflora*	Portulacaceae
3.	Marigold	*Tagetes erecta*	Compositae
4.	Silver cocks comb	*Celosia argentea*	Amaranthaceae
5.	Ramgoat dashalong	*Turnera ulmifolia*	Passifloraceae
6.	Trumpet creeper	*Campsis radicans*	Bignoniaceae
7.	Golden Trumpet	*Allamanda cathartica*	Apocyanaceae
8.	Purple queen	*Tradescantia pallida*	Commelinaceae
9.	China rose	*Hibiscus rosasinensis*	Malvaceae
10.	Crown of thorns	*Euphorbia milii*	Euphorbiaceae
11.	Phillipine ground orchid	*Spathoglottis plicata blume*	Orchidiaceae
12.	Fairy lily	*Zephyranthes rosea*	Amaryllidaceae
13.	Periwinckle	*Catharanthus roseus*	Apocyanaceae
14.	Silver cockscomb	*Celosia argentea*	Amaranthaceae
15.	Wedellia chinensis	*Wedellia chinensis*	Asteraceae
16.	Rangoon creeper	*Combretum indicum*	Combretaceae
17.	Jungle geranium	*Ixora coccinea*	Rubiaceae
18.	Dwarf poinciana	*Caesalpinia pulcherrima*	Leguminosae
19.	Bridal boquet	*Plumeria pudica* Jacq.	Apocyanaceae
20.	Maxican petunia	*Ruellia simplex*	Acanthaceae
21.	Cape-honeysuckle	*Tecoma capensis*	Bignoniaceae
22.	Shrub vinca	*Kopsia fruitcosa*	Apocyanaceae
23.	Bengal trumpet	*Thunbergia grandiflora*	Acanthaceae
24.	Asian pigeonpea	*Clitoria ternatea*	Leguminosae
25.	Frangipani	*Plumeria arubra* L.	Apocyanaceae
26.	Fire cracker flower	*Crossandra infundibuliformis*	Acanthaceae
27.	Star jasmine	*Jasminum multiflorum*	Oleaceae
28.	Crape jasmine	*Tabernaemontana divaricata*	Apocyanaceae
29.	Tuberose	*Polianthes tuberosa*	Asparagaceae
30.	Saptaparni	*Alstonia scholaris*	Apocyanaceae
31.	Red rose	*Rosa indica*	Rosaceae
32.	Bird of paradise flower	*Strelitzia reginae*	Strelitziaceae

In the present investigation, thirty-two flowering crops were assessed belonging to twenty different plant families. The plant families and their percentage contribution are mentioned in Table No. 2.

Table No. 2 Family wise composition of flowering crops

	Contribution in number	Contribution in %
Euphorbiaceae	2	6.3
Acanthaceae	3	9.4
Amaranthaceae	2	6.3
Amaryllidaceae	1	3.1
Apocyanaceae	7	21.9
Asparagaceae	1	3.1
Asteraceae	1	3.1
Bignoniaceae	2	6.3
Combretaceae	1	3.1
Commelinaceae	1	3.1
Compositae	1	3.1
Leguminosae	2	6.3
Malvaceae	1	3.1
Oleaceae	1	3.1
Orchidiaceae	1	3.1
Passifloraceae	1	3.1
Portulacaceae	1	3.1
Rosaceae	1	3.1
Rubiaceae	1	3.1
Strelitziaceae	1	3.1

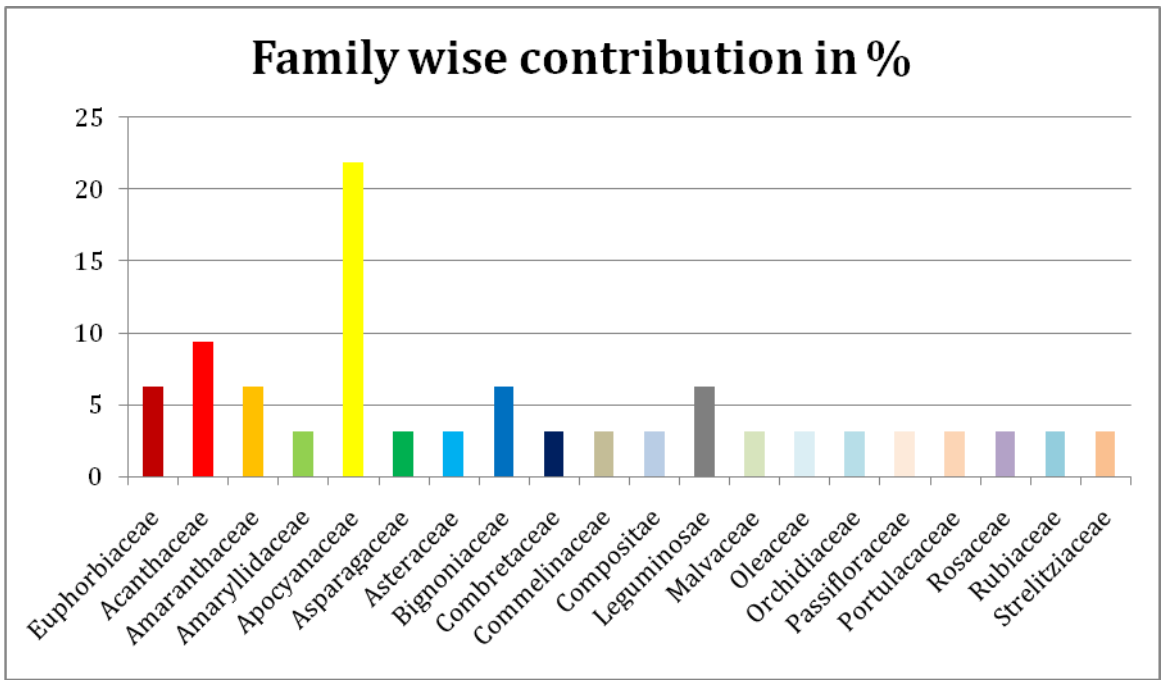

Figure No 1. Family wise composition of flowering crops

For identification of the flowers, different horticulture and floriculture books were referred and many times Google Lens help was also be used for correct identification of the flowers. The pictures taken of the flowers are displayed on plate No. 1.

			
Peregrina	Moss rose	Marigold	Silver cocks comb
			
Ramgoat dashalong	Trumpet creeper	Golden Trumpet	Purple queen
			
China rose	Crown of thorns	Phillipine ground orchid	Fairy lily
			
Periwinckle	Silver cockscomb	*Wedelliachinensis*	Rangoon creeper
			
Jungle geranium	Dwarf poinciana	Bridal boquet	Maxican petunia
			
Cape-honeysuckle	Shrub vinca	Bengal trumpet	Asian pigeonpea
			
Frangipani	Fire cracker flower	Star jasmine	Crape jasmine
			
Tuberose	Saptaparni	Red rose	Bird of paradise flower

Plate No. 1. Pictorial representation of Bee flora during 2020-21

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