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Field evaluation of *Celosia cristata* and *Celosia plumosa* for growth and flowering parameters

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Abstract

The main objective of the study was to evaluate the two species of the cockscomb in North Karnataka conditions for growth and flowering parameters in Rabi and summer season. Twenty genotypes of celosia were used for the study. The experiment was conducted in Floriculture and Landscape Architecture department of Kittur Rani Channamma College of Horticulture, Arabhavi. The experiment was laid out in Randomized complete block design (RCBD) and each treatment was replicated twice. Here maximum plant height (61.15 cm and 65.41 cm), number of leaves (142.30 and 145.75) was observed in *Celosia cristata* var. Chief Gold in both seasons. Maximum leaf length was found in *Celosia cristata* var. Armor Purple (15.73 cm) in Rabi season, whereas in summer season *Celosia cristata* var. Chief Gold (145.75) recorded maximum results. Maximum leaf area was recorded in G₅ (2701.88 cm²) during Rabi and G₂ (2633.37 cm²) in summer. However, *Celosia plumosa* var. Kimono Rose took minimum days (5.60 and 5.85 days during Rabi and summer season) for first flowering, maximum days for fifty per cent flowering took by *Celosia plumosa* var. Kimono Red (13.70 days and 13.82 days) in Rabi and summer season. Whereas, *Celosia cristata* var. Chief Carmine (72.85 days and 73.84 days) and Chief Fire (74.40 days and 75.05 days) recorded maximum days taken for fifty percent senescence of flowers during Rabi and summer season.

Keywords: *Celosia cristata*, *Celosia plumosa*, treatment, randomized complete block design, genotypes

Introduction

The response of different parameters in any crop depends upon several factors like variety, environmental conditions, soil fertility, topography, water quality, cultural practices used and incidence of pest and diseases. Among various factors, selection of a suitable variety is most important to select the appropriate variety for the right environment as this decision is one of the first steps to maximizing yields. Each variety has specific strengths and weaknesses that make it more or less suited for a given environment. On the other hand, the performance of any crop species differs from one region to another under a given set of agro-climatic conditions. Even though, the cultivars are grown under identical conditions, genetic factor of the plants may express the morphological differences. By considering all these points in mind, the celosia cultivars were evaluated during the year 2020-2022 under open condition in two seasons, *i.e.*, in rabi and summer season.

Materials and Methods

The present study was conducted at Kittur rani Channamma College of horticulture, Arabhavi in Karnataka state. Twenty genotypes of Celosia were evaluated during the study. Among the twenty genotypes, twelve genotypes belong to the species *Celosia cristata* and other eight belongs to the species *Celosia plumosa*. Twenty genotypes depicted in Table no. 1. The experiment was laid out in Randomized complete block design with two replications and 45*30 cm spacing.

Results and Discussion

Here, maximum plant height was observed in *Celosia cristata* var. Chief Gold (61.15 cm), which was showing on par result with other genotypes. *i.e.*, *Celosia cristata* var. Chief Carmine (61.02 cm) and *Celosia cristata* var. Chief Fire (58.24 cm). Among *Celosia plumosa*, highest plant height was observed in Century Salmon pink (35.88 cm) and Century yellow (34.75 cm). Whereas, the lowest plant height (10.90 cm) was observed in *Celosia plumosa* var. Kimono Cream during Rabi season.

At summer season, the plant height recorded maximum plant height in *Celosia cristata* var. Chief Gold (65.41 cm). Whereas, lowest in *Celosia plumosa* var. Kimono Cream (10.75 cm) respectively. Such a range of variability of plant height among the varieties might be due to inherent genetic factors and morphological adaptations of the varieties to the microclimate, growing environmental conditions, production technology and cultural practices. The increased plant height of the *cristata* genotypes due to rapid cell division and elongation during the tender growth stage (Sharova *et al.*, 1977) ^[17]. This variation in plant height due to the fact that, the plant height being genetically controlled factor. Similar results was made by earlier researcher Poornima *et al.* (2006) ^[13] in China aster, Ashwini *et al.* (2019) ^[2] in gomphrena, Dilta *et al.* (2005) ^[4] in chrysanthemum, Kulkarni and Reddy (2004) ^[6] in chrysanthemum.

With respect to number of leaves at 60 days after transplanting, *Celosia cristata* var. Chief Gold (142.30) recorded maximum number of leaves, which was statistically on par with the genotypes Chief Carmine and Chief Fire (137.22 and 134.77), lowest was recorded in G₁₉ (14.40). Among *plumosa* genotypes, it was found maximum in Century Pink (106.40) during rabi season, whereas at summers season, *Celosia cristata* var. Chief Gold (145.75) was found maximum and minimum was found in *Celosia plumosa* var. Glorious Pink (15.25). The variations recorded with respect to number of leaves are due to genetic and environmental factors. Leaves are the prime functional units of photosynthesis. Main function of the leaves is to produce food for the plants by photosynthesis. So this can greatly influence the growth, quality and yield of the crops. Similar results according to the number of leaves was recorded in marigold by Singh and Misra (2008) ^[19], Raghuvanshi and Sharma (2011) ^[14], Pal and Kumar (2010) ^[12] in marigold and Zosiamilana *et al.* (2013) ^[22] in China aster.

In case of leaf length, during Rabi season, at 60 DAT, maximum leaf length was found in *Celosia cristata* var. Armor Purple (15.73 cm) which was on par with G₆ (14.50 cm) and G₇ (14.40 cm) followed by G₃ (12.28 cm) and lowest value was found in G₁₇ (2.80 cm), whereas, in summer season at 60 DAT, G₂ (16.90 cm) was recorded maximum leaf length followed by G₇ (13.69 cm) and G₃ (13.43 cm), lowest leaf length was recorded in G₁₇ (2.93 cm). In Rabi planting, leaf breadth was recorded maximum in G₂ (5.21 cm), this was followed by *Celosia cristata* var. Chief Fire (4.38 cm) and Chief Carmine (4.23 cm). However minimum leaf breadth was recorded in *Celosia plumosa* var. Century Pink (2.58 cm). While during summer season at 60 DAT, it was noticed that, maximum leaf breadth was seen in G₂ (5.37 cm) and this was followed by G₆ (4.46 cm), G₅ (4.39 cm) and G₇ (4.14 cm), while least leaf breadth was recorded in G₁₀ (2.64 cm). The differences in leaf characters could be attributed to the genetic makeup of the cultivars by (Rajivkumar and Yadav, 2013 and Anand *et al.*, 2013) ^[16, 1], (Kumar *et al.*, 2014) ^[7] in gerbera.

In case of leaf area, at 60 DAT, maximum leaf area was recorded in G₅ (2701.88 cm²), this was on par with G₆ (2682.94 cm²) and G₂ (2600.06 cm²). This was followed by G₇ (2321.89 cm²) and G₈ (2023.73 cm²). Whereas, leaf area was recorded minimum in G₂₀ (259.29 cm²) in Rabi season. At 60 DAT, maximum leaf area was recorded in G₂ (2633.37 cm²) followed by G₅ (2509.47 cm²), G₆ (2441.74 cm²) and G₇ (2350.98 cm²). While, minimum was recorded in G₂₀ (246.04 cm²) during summer season. Similar results due to season

have been reported by Zosiamilana *et al.* (2013) ^[22] in China aster and this variation might be due to tendency of genotype to produce number of branches and leaves per plant that indirectly increase the leaf area of the plant. Vikas *et al.* (2011) ^[21] and Dhane and Nimbalkar (2002) ^[3] reported similar result in dahlia.

However, it was shown that, the maximum leaf area index was recorded in Chief Carmine variety (1.60) of *cristata* series and it was on par with other varieties also *i.e.*, Chief Fire (1.59) and Armor Purple (1.54) followed by Chief Gold (1.37). The minimum value of leaf area index was examined in Glorious Yellow (0.15) variety of *plumosa* series in Rabi season. Whereas, during summer season maximum leaf area index was observed in Armor Purple (1.56). This was followed by Chief Carmine (1.48) and Chief Fire (1.44). Lowest value was recorded in *Celosia plumosa* var. Glorious Yellow (0.15).

The variety *Celosia plumosa* var. Kimono Rose took minimum days (5.60 and 5.85 days during Rabi and summer season) for first flowering and this was on par with the variety Kimono Red, Glorious Pink, Kimono Cream, Glorious Yellow., while, the maximum days for first flowering (23.90 and 24.50 days) were taken by *Celosia cristata* var. Chief Persimmon. The difference among the cultivars with respect to days to first flowering might be due to varietal differences and their interactions with the prevailing environmental conditions as reported by Rajivkumar and Bidyut (2012) ^[15], Shrutthi and Gajbhiye (2012) ^[18], Rajivkumar and Yadav (2013) ^[16], Kankana and Madhumita (2014) ^[5] and Lagamanna *et al.* (2015) ^[8] in gerbera. The appearance of first flower helps to determine the earliness or late flowering habit of different genotypes, which in turn serves in determining the availability of flowers at a speculated time. And among the two seasons summer planting resulted in early flowering. These findings are similar with the findings reported earlier in marigold by Mohanty *et al.* (2002) ^[11], Singh and Misra (2008) ^[19], Maheshwar (1977) ^[10] in China aster and Singh and Misra (2008) ^[19] in China aster.

The varieties *Celosia plumosa* var. Kimono Rose (14.10 days and 14.74 days), Kimono Red (13.70 days and 13.82 days), Kimono Cream (16.20 days and 16.56 days), Kimono Orange (17.30 days and 17.91 days), Glorious Pink (16.00 days and 17.43 days) and Glorious Yellow (16.00 days and 16.76 days) took minimum days for fifty percent flowering during Rabi and summer seasons. Whereas, maximum days taken for fifty percent flowering were recorded by genotypes *Celosia cristata* var. Chief Carmine (43.80 days and 44.16 days) and Chief Fire (42.60 days and 43.09 days). The difference in days taken for fifty percent flowering was due to genetic trait. Similar findings with respect to this parameter were earlier reported by Suvija *et al.* (2016) ^[23] in chrysanthemum, Raghuvanshi and Sharma (2011) ^[14] in French marigold and Ashwini *et al.* (2019) ^[2] in gomphrena. The findings also related with the findings of in chrysanthemum, Singh and Misra (2008) ^[19] in marigold.

Celosia cristata var. Chief Carmine (72.85 days and 73.84 days) and Chief Fire (74.40 days and 75.05 days) recorded maximum days taken for fifty percent senescence of flowers during Rabi and summer season. The increased number of days to fifty percent flower senescence on the plant could be attributed to genetic change of the plant and also due to presence of highest number of leaves per plant, which supply photo assimilates to the flower petals there by delayed the

flower senescence. The results are in conformity with the findings of Shruthi and Gajbhiye (2012)^[18] and Kankana and Madhumita (2014)^[5] in gerbera. And the variations in number of flowers per plant might be due to heredity traits of the varieties. Differences in photosynthesis efficacy of

varieties may have influenced food accumulation leading to better plant growth and eventually higher number of flowers per plant (Sunitha *et al.*, 2007)^[20]. This might also have increased due to increase in number of branches per plant (Laishram *et al.*, 2013)^[9].

Table 1: Treatments used in the study

G ₁	<i>Celosia cristata</i> var. Armor Orange
G ₂	<i>Celosia cristata</i> var. Armor Purple
G ₃	<i>Celosia cristata</i> var. Armor Red
G ₄	<i>Celosia cristata</i> var. Armor Yellow
G ₅	<i>Celosia cristata</i> var. Chief Carmine
G ₆	<i>Celosia cristata</i> var. Chief Fire
G ₇	<i>Celosia cristata</i> var. Chief Gold
G ₈	<i>Celosia cristata</i> var. Chief Persimmon
G ₉	<i>Celosia plumosa</i> var. Century Red
G ₁₀	<i>Celosia plumosa</i> var. Century Pink
G ₁₁	<i>Celosia plumosa</i> var. Century Rose
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow

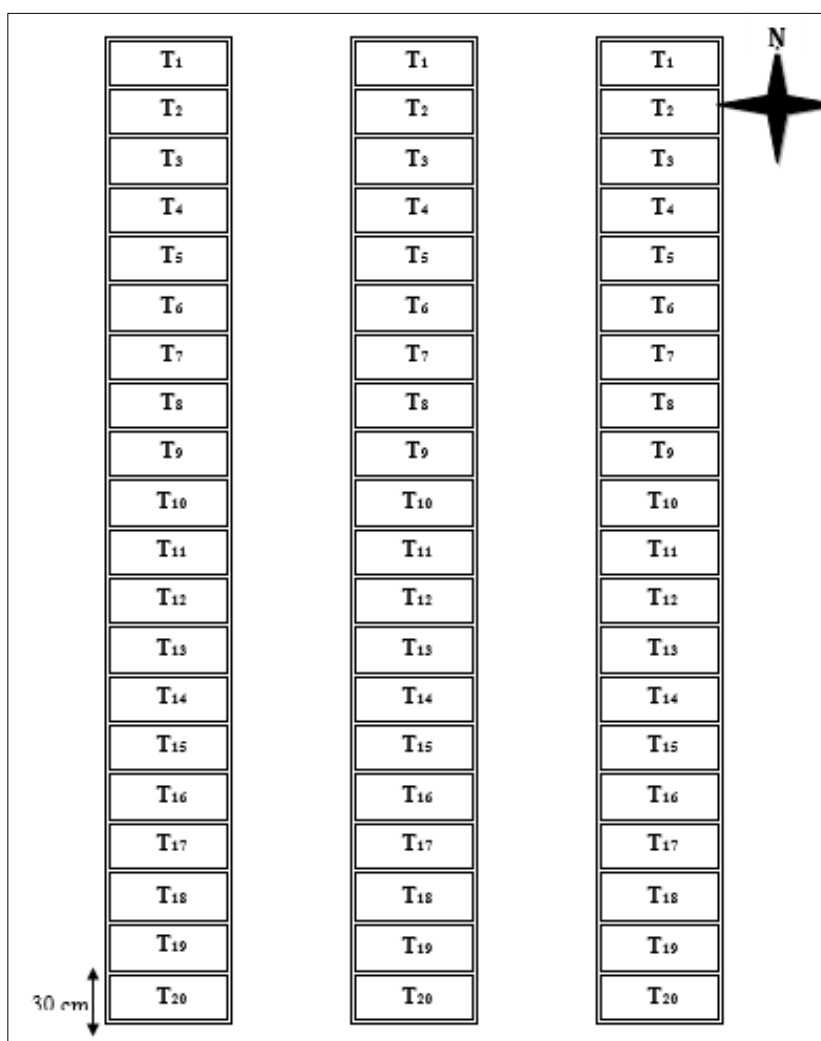


Fig 1: Experimental Layout

Table 2: Plant height and number of leaves of different genotypes of *Celosia* during different seasons (*Rabi* and Summer)

Genotype No.	Genotypes	Plant height (cm)		Number of leaves	
		Rabi (2020-21)	Summer (2021)	Rabi (2020-2021)	Summer (2021)
		60 DAT	60 DAT	60 DAT	60 DAT
G ₁	<i>Celosia cristata</i> var. Armor Orange	16.28	17.19	34.70	35.15
G ₂	<i>Celosia cristata</i> var. Armor Purple	20.80	22.80	35.70	35.75
G ₃	<i>Celosia cristata</i> var. Armor Red	15.73	17.60	36.40	37.15
G ₄	<i>Celosia cristata</i> var. Armor Yellow	14.41	13.43	26.70	27.35
G ₅	<i>Celosia cristata</i> var. Chief Carmine	61.02	60.69	137.22	114.60
G ₆	<i>Celosia cristata</i> var. Chief Fire	58.24	57.38	134.77	116.70
G ₇	<i>Celosia cristata</i> var. Chief Gold	61.15	65.41	142.30	145.75
G ₈	<i>Celosia cristata</i> var. Chief Persimmon	46.77	47.13	85.00	86.05
G ₉	<i>Celosia plumosa</i> var. Century Red	33.33	34.38	49.50	50.25
G ₁₀	<i>Celosia plumosa</i> var. Century Pink	30.54	31.51	106.40	100.45
G ₁₁	<i>Celosia plumosa</i> var. Century Rose	31.74	32.88	40.60	41.60
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink	35.88	36.95	42.60	43.30
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow	34.75	35.82	49.70	50.70
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy	33.00	33.60	52.30	52.85
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose	13.93	14.03	15.00	15.80
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red	17.07	17.28	20.70	21.15
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream	10.90	10.75	18.00	18.50
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange	18.95	19.19	22.30	23.20
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink	14.33	14.52	14.40	15.25
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow	11.17	11.75	15.70	15.95
	S.Em.±	1.09	1.04	3.54	3.55
	C.D. @ 5%	3.24	3.10	10.50	10.52

Table 3: Leaf length and leaf breadth of different genotypes of *Celosia* during different seasons (*Rabi* and Summer)

Genotype No.	Genotypes	Leaf length (cm)		Leaf breadth (cm)	
		Rabi (2020-21)	Summer (2021)	Rabi (2020-2021)	Summer (2021)
		60 DAT	60 DAT	60 DAT	60 DAT
G ₁	<i>Celosia cristata</i> var. Armor Orange	7.75	8.66	3.10	3.16
G ₂	<i>Celosia cristata</i> var. Armor Purple	15.73	16.90	5.21	5.37
G ₃	<i>Celosia cristata</i> var. Armor Red	12.28	13.43	3.61	3.56
G ₄	<i>Celosia cristata</i> var. Armor Yellow	8.76	10.00	3.01	3.40
G ₅	<i>Celosia cristata</i> var. Chief Carmine	9.77	10.33	4.23	4.39
G ₆	<i>Celosia cristata</i> var. Chief Fire	14.50	11.79	4.38	4.46
G ₇	<i>Celosia cristata</i> var. Chief Gold	14.40	13.69	4.16	4.14
G ₈	<i>Celosia cristata</i> var. Chief Persimmon	9.95	10.12	3.66	3.95
G ₉	<i>Celosia plumosa</i> var. Century Red	11.79	11.91	2.75	3.19
G ₁₀	<i>Celosia plumosa</i> var. Century Pink	11.00	10.38	2.58	2.64
G ₁₁	<i>Celosia plumosa</i> var. Century Rose	10.64	10.90	2.53	2.86
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink	10.53	10.97	2.69	2.80
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow	9.19	9.39	3.60	3.27
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy	10.06	10.54	2.97	3.14
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose	4.34	4.72	3.24	3.24
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red	4.19	3.69	3.10	3.13
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream	2.80	2.93	3.15	3.27
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange	5.11	5.43	3.27	3.49
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink	4.89	5.55	2.77	2.68
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow	4.51	5.78	2.32	2.85
	S.Em.±	0.46	0.52	0.21	0.14
	C.D. @ 5%	1.37	1.54	0.64	0.41

Table 4: Leaf area and leaf area index of different genotypes of Celosia during different seasons (Rabi and Summer)

Genotype No.	Genotypes	Leaf area (cm ²)		Leaf area index	
		Rabi (2020-21)	Summer (2021)	Rabi (2020-2021)	Summer (2021)
		60 DAT	60 DAT	60 DAT	60 DAT
G ₁	<i>Celosia cristata</i> var. Armor Orange	1064.43	1130.52	0.63	0.67
G ₂	<i>Celosia cristata</i> var. Armor Purple	2600.06	2633.37	1.54	1.56
G ₃	<i>Celosia cristata</i> var. Armor Red	1519.34	1766.21	0.90	1.05
G ₄	<i>Celosia cristata</i> var. Armor Yellow	459.95	462.08	0.27	0.27
G ₅	<i>Celosia cristata</i> var. Chief Carmine	2701.88	2509.47	1.60	1.48
G ₆	<i>Celosia cristata</i> var. Chief Fire	2682.94	2441.74	1.59	1.44
G ₇	<i>Celosia cristata</i> var. Chief Gold	2321.89	2350.98	1.37	1.39
G ₈	<i>Celosia cristata</i> var. Chief Persimmon	2023.73	2008.21	1.20	1.19
G ₉	<i>Celosia plumosa</i> var. Century Red	1508.28	1498.77	0.89	0.89
G ₁₀	<i>Celosia plumosa</i> var. Century Pink	1297.11	1258.68	0.77	0.74
G ₁₁	<i>Celosia plumosa</i> var. Century Rose	1171.14	1306.85	0.69	0.77
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink	1478.04	1486.73	0.87	0.88
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow	1555.15	1565.83	0.92	0.93
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy	1706.04	1682.34	1.01	1.00
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose	424.54	475.72	0.25	0.28
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red	434.24	519.58	0.26	0.31
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream	293.58	279.36	0.17	0.17
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange	339.24	459.58	0.20	0.27
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink	307.84	264.96	0.18	0.16
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow	259.29	246.04	0.15	0.15
	S.Em.±	94.32	32.38	0.05	0.01
	C.D. @ 5%	279.21	95.86	0.16	0.05

Table 5: Number of days taken for first flowering and fifty percent flowering of different genotypes of Celosia during different seasons (Rabi and Summer)

Genotype No.	Genotypes	Number of days taken for first flowering		Days taken for 50% flowering	
		Rabi (2020-21)	Summer (2021)	Rabi (2020-21)	Summer (2021)
G ₁	<i>Celosia cristata</i> var. Armor Orange	16.40	16.75	25.60	26.39
G ₂	<i>Celosia cristata</i> var. Armor Purple	14.30	14.45	30.40	31.01
G ₃	<i>Celosia cristata</i> var. Armor Red	17.10	17.65	23.50	23.86
G ₄	<i>Celosia cristata</i> var. Armor Yellow	14.70	17.40	23.00	24.05
G ₅	<i>Celosia cristata</i> var. Chief Carmine	19.90	20.95	43.80	44.16
G ₆	<i>Celosia cristata</i> var. Chief Fire	20.30	21.00	42.60	43.09
G ₇	<i>Celosia cristata</i> var. Chief Gold	21.10	21.70	42.20	42.61
G ₈	<i>Celosia cristata</i> var. Chief Persimmon	23.90	24.50	43.10	43.51
G ₉	<i>Celosia plumosa</i> var. Century Red	16.90	18.10	31.10	31.73
G ₁₀	<i>Celosia plumosa</i> var. Century Pink	18.00	18.75	29.90	30.03
G ₁₁	<i>Celosia plumosa</i> var. Century Rose	20.80	21.75	31.50	31.72
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink	19.20	20.20	32.00	32.32
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow	20.60	21.05	32.60	32.73
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy	11.20	11.20	19.80	20.14
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose	5.60	5.85	14.10	14.74
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red	6.80	6.95	13.70	13.82
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream	8.10	8.70	16.20	16.56
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange	9.70	10.00	17.30	17.91
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink	6.80	7.10	16.00	17.43
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow	8.50	8.85	16.00	16.76
	S.Em.±	1.31	1.30	1.32	1.39
	C.D. @ 5%	3.89	3.86	3.91	4.11

Table 6: Number of days taken for fifty percent senescence of flowers of different genotypes of *Celosia* during different seasons (Rabi and Summer)

Genotype No.	Genotypes	Days taken for 50% senescence of flowers	
		Rabi (2020-21)	Summer (2021)
G ₁	<i>Celosia cristata</i> var. Armor Orange	54.00	54.00
G ₂	<i>Celosia cristata</i> var. Armor Purple	69.00	69.70
G ₃	<i>Celosia cristata</i> var. Armor Red	52.30	53.10
G ₄	<i>Celosia cristata</i> var. Armor Yellow	49.30	50.12
G ₅	<i>Celosia cristata</i> var. Chief Carmine	72.85	73.84
G ₆	<i>Celosia cristata</i> var. Chief Fire	74.40	75.05
G ₇	<i>Celosia cristata</i> var. Chief Gold	69.90	71.35
G ₈	<i>Celosia cristata</i> var. Chief Persimmon	68.00	68.53
G ₉	<i>Celosia plumosa</i> var. Century Red	61.30	61.68
G ₁₀	<i>Celosia plumosa</i> var. Century Pink	59.60	59.91
G ₁₁	<i>Celosia plumosa</i> var. Century Rose	61.80	62.17
G ₁₂	<i>Celosia plumosa</i> var. Century Salmon Pink	60.70	61.02
G ₁₃	<i>Celosia plumosa</i> var. Century Yellow	60.00	60.56
G ₁₄	<i>Celosia plumosa</i> var. Century Apricot Brandy	55.80	56.41
G ₁₅	<i>Celosia plumosa</i> var. Kimono Rose	31.90	32.02
G ₁₆	<i>Celosia plumosa</i> var. Kimono Red	31.40	31.64
G ₁₇	<i>Celosia plumosa</i> var. Kimono Cream	30.20	30.61
G ₁₈	<i>Celosia plumosa</i> var. Glorious Orange	31.90	32.54
G ₁₉	<i>Celosia plumosa</i> var. Glorious Pink	31.50	32.16
G ₂₀	<i>Celosia plumosa</i> var. Glorious Yellow	31.00	31.46
	S.Em±	0.71	0.77
	C.D. @ 5%	2.12	2.29

Conclusion

Among eight genotypes of *Celosia cristata*- Chief Carmine, Chief Fire, Chief Gold and among twelve genotypes of *Celosia plumosa*- Century Red, Century Pink and Century Yellow was best suited for Northern Karnataka conditions based on the growth and flowering parameters.

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