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Effect of drying techniques and desiccants on anthocyanin retention and quality attributes in lisianthus varieties

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Abstract
The study investigated the effect of drying techniques and desiccants on anthocyanin retention and quality parameters in two *Lisianthus* varieties ('Rosita clear pink' and 'Rosita bright blue'). Flowers were dried using two methods (hot-air oven and shade drying) combined with three desiccants (sand, silica gel and vermiculite) under a factorial completely randomized design. Results revealed that the combination of silica gel and shade drying significantly retained higher anthocyanin content (1.36 mg 100 g^{-1}) and superior sensory scores for colour, shape and texture. 'Rosita bright blue' performed better than 'Rosita clear pink'. The study concludes that silica gel with shade drying offers the most effective drying approach for preserving *Lisianthus* quality and pigment stability. Lisianthus (*Eustoma grandiflorum*) is a flowering plant known for its elegant, rose-like blooms. Native to warm regions like the Southern United States and Mexico, it thrives in full sun and well-drained soil. The flowers come in various colours such as white, pink, purple and blue, making them popular in bouquets and floral arrangements. Lisianthus is often grown as an annual and has a long vase life, lasting over a week when cut. Its symbolism includes appreciation, charm and elegance. The plant is valued for both garden beauty and decorative use. A 2024-25 study at the College of Horticulture, Bagalkot, evaluated drying methods for Lisianthus. The flowers dried by using different drying methods and desiccants had significant influence on anthocyanin and sensory attributes.

Keywords: Lisianthus, varieties, drying methods, desiccants, sensory attributes

Introduction
Lisianthus (*Eustoma grandiflorum*) a member of the Gentianaceae family, is also known by names like prairie gentian, Texas bluebell, tulip gentian and blue bells. This plant is an annual or short lived perennial herb, reaching a height of up to 80 cm. Its leaves are simple, opposite and sessile in nature. The flowers are vibrant, borne on long pedicels and are terminal and solitary. As a rising star among cut flowers, *Eustoma grandiflorum* often referred to as *E. russellianum* or 'Texas bluebell', is native to Colorado, Kansas, Nebraska and Texas, where it thrives as an annual or biennial species. In summer, the plants produce bell shaped, satin like flowers that are pale purple with darker center, either blooming individually or clustered together. Over the past 20 years, this species has been extensively hybridized, resulting in numerous series with unique colour variants and stand-alone cultivars. The colour range from pink, purple, red, white and yellow to various combinations, including singles and doubles, with diverse patterns and seasonal adaptability. Cultivars are classified as tall varieties (60 to 90 cm) cultivated as cut flowers in fields or under glass, or shorter types with multiple stems, ideal for pots. Innovative formats like 'Mono Lisi', originating from Montana Lisianthus feature individual florets arranged into posies. Lisianthus known for their striking and exotic appearance are among the best-selling flowers worldwide and have gained immense popularity in Europe and North America. In the UK, they are largely imported. Although they are considered challenging to cultivate, growing them near the market could bring significant benefits. Many of the challenges arise during propagation, which is why most growers choose to source mature plug plants (Darvish *et al.*, 2021) [1].

Material and Methods

The present investigation entitled was done to understand the effect of different drying techniques and desiccants for cut flower that can be used for value addition. The details of the materials used and the procedure adopted in the investigation, which was carried out at Departmental Laboratory, Department of Postharvest Management, College of Horticulture, Lisianthus var. Rosita clear pink and Rosita bright blue were collected in the month of December to January as it is the peak time to collect the desired flower. For this research flowers were collected from the Horticulture Research Extension Centre, Kanabargi, Belagavi. There are two drying methods (Hot air oven, Shade drying) and three desiccants (Sand, Silica gel and Vermiculite). The experiment was laid out in a factorial completely randomised design with three replications. Under this experiment, overall 12 treatments comprising different drying techniques with desiccants. Treatment comprised of T_1 (Rosita clear pink + sand + Hot air oven), T_2 (Rosita clear pink + sand + Shade dry), T_3 (Rosita clear pink + Silica gel + Hot air oven), T_4 (Rosita clear pink + Silica gel + Shade dry), T_5 (Rosita clear pink +Vermiculite + Hot air oven), T_6 (Rosita clear pink + Vermiculite + Shade dry), T_7 (Rosita bright blue + Sand + Hot air oven), T_8 (Rosita bright blue + Sand + Shade dry), T_9 (Rosita bright blue + Silica gel +Hot air oven), T_{10} (Rosita bright blue + Silica gel + Shade dry), T_{11} (Rosita bright blue + Vermiculite + Hot air oven), T_{12} (Rosita bright blue + Vermiculite + Shade dry). The analysis was done using the formula of Fisher and Yates. The quality score was done using 9 point hedonic scale (9=Excellent, 1=Poor).

Results and Discussion

Anthocyanin (mg)

Among the two varieties, maximum anthocyanin was observed in var Rosita bright blue (1.17, 1.11 and 1.05%) compared to var Rosita clear pink (0.40, 0.36 and 0.32%) during 30, 60 and 90 days of storage. Among the three desiccants, maximum anthocyanin was recorded in silica gel (0.87, 0.83 and 0.78%) compared to vermiculite (0.79, 0.75 and 0.70%) followed by sand (0.69, 0.64 and 0.58%) during 30, 60, 90 days of storage. Among the drying methods maximum anthocyanin was noticed in shade dry (1.17, 1.11 and 1.05%) compared to hot air oven (0.40, 0.36 and 0.32%) during 30, 60 and 90 days of storage. Among the interaction maximum anthocyanin was observed in $V_2D_2M_2$ (1.33, 1.29 and 1.25%) while minimum anthocyanin was noticed in $V_1D_1M_1$ (0.28, 0.24 and 0.20%) during 30, 60, 90 days of storage. Different drying techniques and desiccants were found to significantly affect the anthocyanin content in dried lisianthus flowers. The data clearly demonstrate that anthocyanin degradation is influenced by variety, drying method, desiccant type and their interactions. Rosita bright blue retained significantly higher anthocyanin levels, likely due to its genetic predisposition for delphinidin-based pigments. Silica gel proved most effective in preserving anthocyanins, likely due to its rapid and uniform moisture absorption, which minimises oxidative stress and pigment breakdown. Hot air oven drying (M_2) also outperformed shade drying (M_1), possibly because controlled heat reduces enzymatic activity responsible for anthocyanin degradation, as supported by Darvish *et al.* (2021) [1], who found that brassinosteroid treatments under controlled conditions enhanced anthocyanin biosynthesis and retention in lisianthus.

Among the treatments maximum anthocyanin content was retained in $V_2D_2M_2$ (1.36, 1.33, 1.29 and 1.25) While minimum was noticed in $V_1D_1M_1$ (0.32, 0.28, 0.24 and 0.20) additionally, anthocyanin stability is known to be affected by vacuolar pH and pigment type. According to Takatori (2022) [5], lisianthus varieties differ in their anthocyanin composition some accumulating cyanidin, others delphinidin or pelargonidin which influences their colour stability and degradation rate during drying and storage.

Table 1: Anthocyanins of dried Lisianthus flowers during storage as influenced by various desiccants and drying methods

Treatments	Anthocyanin (mg/100 g flowers)			
	DAS			
Variety	Initial	30	60	90
V_1	0.42	0.40	0.36	0.32
V_2	1.22	1.17	1.11	1.05
S.EM ±	0.01	0.01	0.01	0.01
C.D. at 1%	0.03	0.03	0.02	0.02
Desiccant				
D_1	0.74	0.69	0.64	0.58
D_2	0.90	0.87	0.83	0.78
D_3	0.82	0.79	0.75	0.70
S.EM ±	0.01	0.01	0.01	0.01
C.D. at 1%	0.04	0.03	0.03	0.02
Method				
M_1	0.42	0.40	0.36	0.32
M_2	1.22	1.17	1.11	1.05
S.EM ±	0.01	0.01	0.01	0.01
C.D. at 1%	0.03	0.03	0.02	0.02
Interactions				
$V_1D_1M_1$	0.32	0.28	0.24	0.20
$V_1D_1M_2$	0.41	0.38	0.34	0.30
$V_1D_2M_1$	0.45	0.42	0.38	0.34
$V_1D_2M_2$	0.52	0.50	0.47	0.44
$V_1D_3M_1$	0.36	0.35	0.31	0.27
$V_1D_3M_2$	0.47	0.45	0.42	0.39
$V_2D_1M_1$	1.02	0.94	0.86	0.78
$V_2D_1M_2$	1.21	1.16	1.10	1.03
$V_2D_2M_1$	1.28	1.23	1.17	1.10

$V_2D_2M_2$	1.36	1.33	1.29	1.25
$V_2D_3M_1$	1.15	1.09	1.03	0.96
$V_2D_3M_2$	1.30	1.27	1.23	1.18
Mean	0.82	0.78	0.73	0.68
S.EM ±	0.02	0.02	0.01	0.01
C.D. at 1%	0.07	0.06	0.05	0.05

DAS: Days after storage
V_1=Rosita clear pink D_1=Sand M_1=Hot air oven drying
V_2=Rosita bright blue D_2=Silica gel M_2=Shade drying
D_3=Vermiculite

Quality parameters of dried flowers

The quality attributes of dried cut chrysanthemum flowers specifically colour, shape, texture, overall appearance and acceptability were affected by the type of desiccant used both before and after storage (Tables 2, 3 and 4). These tables summarize how each desiccant altered the visual and sensory characteristics of the flowers at the initial evaluation and after the designated storage periods.

Flower colour

The colour of dried cut chrysanthemum flowers was significantly affected by the type of desiccant used during storage (Table 2). Across the two varieties, the Lollipop pink (V_1) variety consistently received higher colour scores (7.62, 7.60 and 7.59 at 30, 60 and 90 days, respectively) than Bright orange (6.92, 6.91 and 6.90). Regarding desiccants, silica gel (D_2) produced the highest colour ratings (7.97, 7.95 and 7.94), followed by vermiculite (D_3: 7.29, 7.27 and 7.26), whereas sand (D_1) yielded the lowest scores (6.57, 6.55 and 6.53). The drying method also influenced colour quality. Hot-air-oven drying achieved superior scores (7.62, 7.60 and 7.59) compared with shade drying (6.92, 6.91 and 6.90). Interaction effects highlighted that the combination of Lollipop-pink, silica-gel and hot-air-oven ($V_1D_2M_1$) attained the highest overall colour rating (8.96, 8.92 and 8.91), whereas the Lollipop pink, sand and hot-air-oven combination ($V_1D_1M_1$) recorded the lowest (6.95, 6.92 and 6.91) across the three storage intervals.

Flower shape

The shape of cut chrysanthemum flowers was significantly influenced by different desiccants during storage (Table 2). Among the two varieties, higher scores were consistently recorded in Lollipop Pink (7.57, 7.55 and 7.54) compared to Bright orange (6.81, 6.79 and 6.78) at 30, 60, and 90 days after storage (DAS), respectively. With respect to desiccants, flowers embedded in silica gel (D_2) achieved the highest shape scores (7.92, 7.91 and 7.90), followed by vermiculite (7.25, 7.23 and 7.22). The lowest scores were observed with sand (6.40, 6.38 and 6.37) across the three storage periods. Considering drying methods, hot-air oven drying (M_1) produced higher shape scores (7.57, 7.55 and 7.54), whereas shade drying (M_2) recorded comparatively lower values (6.81, 6.79 and 6.78). A significant interaction effect was also evident. The maximum shape score was obtained in $V_1D_2M_1$ (8.97, 8.95 and 8.93), while the minimum was observed in $V_2D_3M_2$ (6.53, 6.52 and 6.51) at 30, 60, and 90 DAS, respectively.

Flower texture

Significant variation in texture of dried lisianthus flowers was observed due to varieties, desiccants and drying methods during storage (Table 3). Among the varieties, var. Rosita bright blue consistently recorded higher texture scores (8.13, 8.04 and 8.00 at 30, 60 and 90 DAS, respectively) compared to Rosita clear pink (7.75, 7.67 and 7.62). Among desiccants, silica gel showed the maximum scores (8.82, 8.74 and 8.69), followed by vermiculite (7.67, 7.56 and 7.53), and while sand recorded the lowest (7.32, 7.26 and 7.21). Shade drying maintained superior texture (8.13, 7.79 and 7.78) compared to hot-air oven drying (7.75, 7.72 and 7.62). Regarding interaction effects, the highest texture scores were achieved in $V_2D_2M_2$ (8.90, 8.79 and 8.74), whereas the lowest were in $V_1D_1M_1$ (6.87, 6.79 and 6.73) across storage intervals.

Table 2: Quality parameters of dried Lisianthus flowers during storage as influenced by various desiccants and drying methods

Treatments	Colour				Shape			
	DAS							
Variety	**Initial**	**30**	**60**	**90**	**Initial**	**30**	**60**	**90**
V_1	7.55	7.50	7.62	7.58	8.14	8.07	8.01	7.95
V_2	8.24	8.17	7.94	7.72	7.86	7.79	7.69	7.66
S.EM ±	0.05	0.05	0.06	0.03	0.06	0.05	0.04	0.04
C.D. at 1%	0.18	0.20	0.23	0.13	0.23	0.18	0.17	0.16
Desiccant								
D_1	7.40	7.34	7.03	6.98	7.81	7.73	7.66	7.58
D_2	8.88	8.85	8.83	8.80	8.93	8.86	8.80	8.74
D_3	7.40	7.31	7.48	7.16	7.26	7.20	7.10	7.10
S.EM ±	0.06	0.06	0.07	0.04	0.07	0.06	0.05	0.05
C.D. at 1%	0.22	0.24	0.28	0.16	0.28	0.22	0.21	0.20
Method								
M_1	7.55	7.50	7.45	7.40	8.14	8.07	8.01	7.95
M_2	8.24	8.17	7.94	7.72	7.86	7.79	7.69	7.66
S.EM ±	0.05	0.05	0.06	0.03	0.06	0.05	0.04	0.04
C.D. at 1%	0.18	0.20	0.28	0.16	0.23	0.18	0.17	0.16
Interactions								

$V_1D_1M_1$	5.83	5.81	5.76	5.73	7.97	7.88	7.74	7.68
$V_1D_1M_2$	7.94	7.91	7.89	7.86	7.85	7.78	7.72	7.69
$V_1D_2M_1$	8.91	8.88	8.86	8.82	8.97	8.88	8.82	8.78
$V_1D_2M_2$	8.75	8.73	8.70	8.68	8.84	8.82	8.78	8.72
$V_1D_3M_1$	6.98	6.84	6.78	6.68	7.64	7.58	7.52	7.48
$V_1D_3M_2$	6.85	6.78	7.68	7.64	7.54	7.50	7.42	7.38
$V_2D_1M_1$	7.94	7.85	7.78	7.72	7.87	7.78	7.70	7.63
$V_2D_1M_2$	7.88	7.78	6.68	6.62	7.54	7.48	7.40	7.34
$V_2D_2M_1$	8.90	8.87	8.85	8.83	8.95	8.88	8.82	8.75
$V_2D_2M_2$	8.94	8.93	8.91	8.88	8.94	8.85	8.78	8.72
$V_2D_3M_1$	7.95	7.84	7.78	7.72	6.97	6.90	6.68	6.82
$V_2D_3M_2$	7.83	7.78	7.68	6.62	6.88	6.82	6.78	6.72
Mean	7.89	7.83	7.77	7.65	7.99	7.92	7.84	7.80
S.EM ±	0.11	0.12	0.14	0.08	0.14	0.11	0.11	0.10
C.D. at 1%	0.44	0.49	0.57	0.32	0.56	0.44	0.42	0.40

DAS: Days after storage
V_1=Rosita clear pink D_1=Sand M_1=Hot air oven drying
V_2=Rosita bright blue D_2=Silica ge M_2=Shade drying
D_3=Vermiculite

Flower appearance

Significant differences in the appearance of dried lisianthus flowers were observed due to varieties, desiccants and drying methods during storage (Table 3). Between the two varieties, Rosita bright blue consistently scored higher (8.05, 8.01 and 8.77 at 30, 60 and 90 DAS, respectively) compared to Rosita clear pink (7.83, 7.81 and 7.73). Among desiccants, silica gel yielded the highest appearance scores (8.84, 8.80 and 8.77), followed by vermiculite (7.70, 7.64 and 7.56), while sand recorded the lowest (7.32, 7.29 and 7.23). With respect to drying methods, shade drying maintained superior appearance (8.05, 8.01 and 7.97) compared to hot-air oven drying (7.85, 7.81 and 7.73). The interaction effect revealed that the maximum scores were recorded in $V_2D_2M_2$ (8.95, 8.91 and 8.87), while the lowest were observed in $V_1D_1M_2$ (6.82, 6.78 and 6.72).

Overall acceptability

The effect of different desiccants on the overall acceptability of dried lisianthus flowers is presented in Table 4. Significant variation were observed among varieties, desiccants and drying methods during storage. Between the two varieties, Rosita bright blue consistently received higher scores (8.03, 7.92 and 7.83 at 30, 60, and 90 DAS, respectively) compared to Rosita clear pink (7.78, 7.77 and 7.72). With respect to desiccants, silica gel recorded the highest scores (8.84, 8.79 and 8.75), followed by vermiculite (7.47, 7.44 and 7.33), while sand consistently showed the lowest scores (7.42, 7.31 and 7.25). Among drying methods, shade drying produced superior acceptability (8.03, 7.85 and 7.78) compared to hot-air oven drying (7.79, 7.74 and 7.67). The interaction effect showed that $V_2D_2M_2$ (Rosita bright blue + silica gel + shade dry) achieved the highest acceptability (8.90, 8.84 and 8.80), whereas $V_1D_1M_1$ (Rosita clear pink + sand + hot-air oven) recorded the lowest scores (6.85, 6.77 and 6.72) across the storage period respectively.

Quality assessment plays a pivotal role in determining the consumer appeal of any product. The present study clearly demonstarates that both the choice of desiccant and the drying technique significantly influenced the quality attributes of dried lisianthus flowers. Among the three embedding media tested, the variety Rosita bright blue, when subjected to shade drying with silica gel as the embedding material, recorded superior scores for colour (8.94), texture (8.98), appearance (8.98) and overall acceptability (8.84). This enhanced performance can be attributed to the fine, smooth granularity of silica gel and its rapid moisture absorption capacity, which facilitates efficient dehydration while preserving the structural and aesthetic integrity of the flowers. Comparable outcomes were reported by Sowmya (2024) in rose and by Katoch (2010) in chrysanthemum, where silica gel proved to be the most effective medium for maintaining ornamental quality during the drying process.

According to Nirmala *et al.* (2008) [3], silica gel demonstrated superior moisture absorption efficiency compared to sand and vermiculite, contributing to better preservation of flower shape during drying. Safeena and Patil (2013) [4] also highlighted silica gel as the most effective embedding medium for maintaining colour integrity in flowers such as helichrysum and statice. Supporting this, Dhatt *et al.* (2007) [2] observed that rose cultivars like christiandior and gold medal achieved the highest scores for shape retention when dried using silica gel.

Table 3: Quality parameters of dried lisianthus flowers during storage as influenced by various desiccants and drying methods

Treatments	Texture				Appearance			
	DAS							
Variety	Initial	30	60	90	Initial	30	60	90
V_1	7.81	7.75	7.67	7.62	7.85	7.83	7.81	7.73
V_2	8.20	8.13	8.04	8.00	8.09	8.05	8.01	7.97
S.EM ±	0.04	0.05	0.06	0.03	0.05	0.05	0.04	0.05
C.D. at 1%	0.16	0.19	0.23	0.14	0.19	0.18	0.16	0.20
Desiccant								
D_1	7.40	7.32	7.26	7.21	7.35	7.32	7.29	7.23
D_2	8.88	8.82	8.74	8.69	8.88	8.84	8.80	8.77

D_3	7.75	7.67	7.56	7.53	7.73	7.70	7.64	7.56
S.EM ±	0.05	0.06	0.07	0.04	0.06	0.06	0.05	0.06
C.D. at 1%	0.20	0.23	0.28	0.17	0.23	0.22	0.20	0.24
Method								
M_1	7.81	7.75	7.72	7.62	7.88	7.85	7.81	7.73
M_2	8.20	8.13	7.79	7.78	8.09	8.05	8.01	7.97
S.EM ±	0.04	0.05	0.06	0.03	0.05	0.05	0.04	0.05
C.D. at 1%	0.16	0.19	0.23	0.14	0.19	0.18	0.16	0.20
Interactions								
$V_1D_1M_1$	6.97	6.87	6.79	6.72	6.87	6.85	6.82	6.77
$V_1D_1M_2$	6.88	6.82	6.78	6.73	6.84	6.82	6.78	6.72
$V_1D_2M_1$	8.85	8.82	8.78	8.72	8.74	8.71	8.67	8.63
$V_1D_2M_2$	8.83	8.78	8.71	8.66	8.87	8.82	8.76	8.75
$V_1D_3M_1$	7.78	7.70	7.59	7.55	7.87	7.85	7.81	7.57
$V_1D_3M_2$	7.55	7.48	7.39	7.36	7.84	7.82	7.77	7.72
$V_2D_1M_1$	7.98	7.89	7.88	7.82	7.94	7.89	7.86	7.81
$V_2D_1M_2$	7.75	7.70	7.59	7.55	7.74	7.72	7.68	7.62
$V_2D_2M_1$	8.84	8.78	8.69	8.65	8.93	8.89	8.87	8.82
$V_2D_2M_2$	8.98	8.90	8.79	8.74	8.98	8.95	8.91	8.87
$V_2D_3M_1$	7.98	7.89	7.79	7.74	7.65	7.62	7.57	7.53
$V_2D_3M_2$	7.68	7.60	7.49	7.47	7.55	7.49	7.42	7.41
Mean	8.00	7.93	7.85	7.80	7.98	7.95	7.91	7.85
S.EM ±	0.10	0.12	0.14	0.08	0.12	0.11	0.10	0.12
C.D. at 1%	0.39	0.46	0.56	0.33	0.47	0.45	0.40	0.48

DAS: Days after storage
V_1= Rosita clear pink drying D_1= Sand M_1= Hot air oven
V_2= Rosita bright blue D_2= Silica gel M_2= Shade drying
D_3= Vermiculite

Table 4: Quality parameters of dried lisianthus flowers during storage as influenced by various desiccants and drying methods

Treatments	**Overall acceptability**			
	DAS			
Variety	**Initial**	**30**	**60**	**90**
V_1	7.83	7.78	7.77	7.72
V_2	8.09	8.03	7.92	7.83
S.EM ±	0.05	0.05	0.05	0.04
C.D. at 1%	0.19	0.18	0.18	0.18
Desiccant				
D_1	7.49	7.42	7.31	7.25
D_2	8.89	8.84	8.79	8.75
D_3	7.53	7.47	7.44	7.33
S.EM ±	0.06	0.06	0.06	0.05
C.D. at 1%	0.23	0.22	0.22	0.22
Method				
M_1	7.84	7.79	7.74	7.67
M_2	8.05	8.03	7.85	7.78
S.EM ±	0.05	0.05	0.05	0.04
C.D. at 1%	0.19	0.18	0.18	0.18
Interactions				
$V_1D_1M_1$	6.91	6.85	6.77	6.72
$V_1D_1M_2$	7.37	7.33	7.29	7.25
$V_1D_2M_1$	8.86	8.83	8.78	8.73
$V_1D_2M_2$	8.82	8.78	8.73	8.70
$V_1D_3M_1$	7.56	7.49	7.42	7.32
$V_1D_3M_2$	7.44	7.39	7.56	7.52
$V_2D_1M_1$	7.93	7.85	7.80	7.74
$V_2D_1M_2$	7.72	7.67	7.33	7.28
$V_2D_2M_1$	8.90	8.85	8.80	8.76
$V_2D_2M_2$	8.96	8.90	8.84	8.80
$V_2D_3M_1$	7.63	7.56	7.45	7.45
$V_2D_3M_2$	7.48	7.42	7.34	7.05
Mean	7.96	7.91	7.84	7.77
S.EM ±	0.12	0.11	0.11	0.11
C.D. at 1%	0.46	0.44	0.45	0.43

DAS: Days after storage
V_1= Rosita clear pink drying D_1= Sand M_1= Hot air oven
V_2= Rosita bright blue D_2= Silica gel M_2= Shade drying
D_3= Vermiculite

Conclusion

The various desiccants and drying methods were used to maintain the quality of dried lisianthus var Rosita clear pink and Rosita bright blue. The salient findings are listed below.

- **Desiccant Efficiency:** Silica gel was identified as the most effective desiccant for preserving the quality of dried lisianthus flowers.
- **Optimal Drying Method**: Embedding flowers in silica gel and drying them in Shade dry yielded superior results in terms of structural integrity, colour retention and overall aesthetic quality for lisianthus.
- **Varietal Performance:** Among the tested lisianthus cultivars, 'Rosita bright blue' demonstrated better retention of sensory attributes such as colour, petal texture and shape compared to 'Rosita clear pink'.

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