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Studies on the post-harvest package technology of hybrid tea rose var. mainu parle for local market

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Abstract

The experiment was conducted in the Floriculture laboratory of AICRP on Floriculture at Chiplima, Sambalpur, Odisha for three years from 2011-12 to 2013-14. The experiment was laid out I Factorial CRD with two treatments water and Bleaching powder (50ppm Chlorine) and four packaging materials those were Low density polyethylene (LDPE) 100 gauge, Polypropylene (PP) 100 gauge, Cellophane paper, No packaging material as control. Ten number of flower stem at commercial harvesting stage were taken in three replication. The treated material was kept for 6 hours under ambient condition in cardboard box as the time of transit. The data for observation was pooled over and it was observed that, the cut rose stems of Hybrid tea Rose variety Mainu Parle when packed in 100 gauge LDPE sheet and pulsed with Bleaching powder (50ppm chlorine) exhibited maximum vase life (8.62 days) and maximum final flower diameter (7.28 cm) and water uptake (43.23 ml). However, Percentage weight loss after simulated transit was non-significant in all the treatments.

Keywords: bleaching powder, LDPE, PP, cellophane paper, mainu parle

Introduction

Rose, a universally celebrated flower, has been used as a garden plant since the dawn of civilization. It belongs to family Rosaceae and Genus *Rosa* which contains more than 150 species and 1400 cultivars (Gault & Synge, 1971) [1]. Rose enjoys superiority for its use in decorative purposes and its delicacy. Flowers remain alive even after harvest and continue their metabolic activities like depletion of carbohydrate due to respiration; rise in temperature, water stress, increased accumulation of ethylene and finally rapid deterioration due to microbial activity. All this causes deterioration of the harvest. This calls for the need of post harvest handling and packaging technologies. Critical factors involved in post harvest are stage of harvest, post harvest treatments like pulsing, storage, packing, transportation in cold Chain and finally vase life of the flower.

Rose is an important flower among all flowers and is available in many colours. But mostly Red colour flowers of Rose are highly priced among the buyers due to its magnificent Hue. "Mainu Parle" a Hybrid Tea variety of rose is commonly available as cut flower. The ambient conditions for its storage are temperature < 5°C, Relative Humidity of 65% -70% and 24 hours daylight for retail display.

Materials and Methods

The experiment was conducted in the Floriculture laboratory of AICRP on Floriculture at Chiplima, Sambalpur, Odisha, during the year 2011-2012, 2012-2013 and 2013-2014 (3 years). Hybrid Tea rose variety Mainu Parle was selected for the purpose of study. Design of the experiment was factorial CRD. There were two treatments *vis a vis* water and Bleaching powder (50ppm Chlorine) and four packaging materials that is Low density polyethylene (LDPE) 100 gauge, Polypropylene (PP) 100 gauge, Cellophane paper, No packaging material. The flowers were harvested in the commercial stage of harvest. Ten number of flower stem were taken per treatment in three replication. The treated material was kept for 6 hours under ambient condition in cardboard box as the time of transit. The observations recorded were vase life (showing signs of wilting) in days, final flower diameter in centimeter, total water absorbed per stem in milliliter and percentage weight loss after simulated transit.

Results and Discussion

The pooled data over three years (Table-1) indicate that the vase life of cut rose stems was maximum (8.62 days) when the stems were pulsed with bleaching powder (50 ppm chlorine) and packed in LDPE sheet (100 gauge) and kept in simulated transit for 6 hours but was lowest in which there was no packaging material and was pulsed with water (5.10 days).

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The final flower diameter (7.28 cm) and water uptake (43.23 ml) was also recorded maximum in the same treatment, with bleaching powder (50 ppm chlorine) and packed in LDPE sheet (100 gauge). Percentage weight loss after simulated transit was non-significant in all the treatments at 5% of significance but maximum was recorded (6.67%) in case where there was no packing material and pulsed with bleaching powder (50 ppm chlorine). The postharvest longevity of fresh-cut flowers is often limited by the accumulation of bacteria in vase water and flower stems. Aqueous chlorine solution is a strong biocide with potential application for sanitizing cut flower solutions. It was

evaluated to test the potential of bleaching powder to prevent the build-up of bacteria in vase water and extend the longevity of cut flowers. (Macnish *et al.*, 2011) [3] also observed that increased solution uptake by the cut roses was associated with extension of their vase life. Longer flower life and increase in solution uptake could be associated with low resistance to water flow and the vase solution absorbance (Knee, 2000) [2]. Perhaps an enhanced solution uptake can be attributed to reduced microbial proliferation in response to the biocides present in the holding solutions and a significant reduction in vascular occlusion (Macnish *et al.*, 2011) [3].

Table 1: The effect of chemical and packing material on keeping quality of cut roses cv. Mainu Parle. (POOLED DATA OF 3 YEARS)

Packing material	Vase life (days)*		Final flower diameter (cm)*		Total water absorbed/stem (ml)*		% Weight loss after simulated transit	
	Water	Bleaching powder (50 ppm chlorine)	Water	Bleaching powder (50 ppm chlorine)	Water	Bleaching powder (50 ppm chlorine)	Water**	Bleaching powder (50 ppm chlorine)**
Polyethylene(LDPE)	5.93	8.62	6.39	7.28	31.86	43.23	5.97 (2.63)	6.20 (2.47)
Polypropylene (PP)	5.83	7.88	5.09	6.82	32.73	40.11	5.32 (2.31)	6.24 (2.50)
Cellophane	5.73	8.00	5.69	6.81	29.44	31.49	5.72 (2.43)	6.16 (2.48)
Without packaging	5.10	6.21	4.53	5.78	24.40	41.27	6.10 (2.89)	6.67 (2.58)
Mean	5.65	7.68	5.42	6.67	29.61	39.03	5.78 (2.41)	6.32 (2.51)
	SE	CD	SE	CD	SE	CD	SE	CD
Treatment	0.08	0.24	0.03	0.13	0.42	1.48	0.10	0.13
Packing material	0.16	0.48	0.06	0.22	0.83	2.59	0.15	0.20
Interaction	0.15	0.51	0.10	0.25	0.97	3.03	0.18	0.23

* Significant at 5% ** Square root transformed data are in parenthesis

Conclusion

The cut rose stems of Hybrid tea Rose variety Mainu Parle when packed in 100 gauge LDPE sheet and pulsed with Bleaching powder (50ppm chlorine) exhibited maximum vase life over other treatments during short duration transit of 6 hours duration for local market can be recommended for use.

References

1. Gault SM, Syngue PM. The Dictionary of Roses in Color, Ebury press and Michael Joseph, Hagul. 1971, 11.
2. Knee M. Selection of biocidides for use in floral preservatives. Postharvest Biology and Technology. 2000; 18:227-234.
3. Macnish JA, Leonard RT, Terril N. Potential of chlorine dioxide to extend the longevity of cut flowers. *HortScience*: a publication of the American Society for Horticultural Science. 2006, 41-43.