www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; 11(9): 966-967

www.thepharmajournal.com
Received: 02-06-2022
Accepted: 10-07-2022

S Vamshi Krishna
Department of Vegetable Science, College of Horticulture, Anantharajupeta, Dr. YSR Horticultural University, Andhra Pradesh, India

D Sreedhar
Scientist, Department of Horticulture, Horticultural Research Station, Anantharajupeta, Dr. YSR Horticultural University, Kadapa, Andhra Pradesh, India

Syed Sadarunnisa
Professor, Department of Vegetable Science, College of Horticulture, Anantharajupeta, Dr. YSR Horticultural University, Andhra Pradesh, India

M Raja Naik
Associate Professor, Department of Floriculture and Landscape Architecture, College of Horticulture, Anantharajupeta, Dr. YSR Horticultural University, Andhra Pradesh, India

Y Sharath Kumar Reddy
Scientist, Department of Plant Physiology, Horticultural Research Station, Anantharajupeta, Dr. YSR Horticultural University, Kadapa, Andhra Pradesh, India

Corresponding Author:
S Vamshi Krishna
Department of Vegetable Science, College of Horticulture, Anantharajupeta, Dr. YSR Horticultural University, Andhra Pradesh, India

Effect of biostimulants on postharvest life of muskmelon (*Cucumis melo* L.) cultivars

S Vamshi Krishna, D Sreedhar, Syed Sadarunnisa, M Raja Naik and Y Sharath Kumar Reddy

Abstract
An experiment was conducted at Horticultural Research Station, Anantharajupeta, to know effect of biostimulants on postharvest yield of muskmelon (*Cucumis melo* L.) cultivars. Four cultivars along with six biostimulants were assessed for their shelf life (days). Among the cultivars Punjab Suneheri recorded highest shelf life. Highest shelf life was recorded in the treatment with homobrassinolide @ 3 ml/lit (T_3). Interaction amongst the treatment combinations showed that highest shelf life was observed in the treatment combination C_1 T_3 (Homobrassinolide @ 3 ml/lit on Punjab Suneheri).

Keywords: Muskmelon, shelf life, biostimulants

Introduction
Muskmelon (*Cucumis melo* L.) is an important cucurbitaceous crop originated in India (Sebastian *et al*., 2010) [4] with diploid chromosome number 2n=24. It is a highly cross-pollinated crop and is mostly cultivated in tropical and sub-tropical regions. In India muskmelon grows in an area of 69,000 Ha with production of 1346'000 MT (Annon. 2019-20) [1]. In India Uttar Pradesh is the leading state for muskmelon cultivation. In Andhra Pradesh, it is mostly cultivated in areas of Ananthapuramu, Annamayya, Kadapa and Chittoor districts. In order to study the effect of biostimulants on postharvest life of muskmelon cultivars. As a consequence, this experiment was carried out in muskmelon.

Materials and Methods
The investigation was carried out at Horticultural Research Station, Anantharajupeta, Dr. YSR Horticultural University, Andhra Pradesh at summer 2022, factor-I includes four muskmelon cultivars C_1: Punjab Suneheri, C_2: Papasa, C_3: Kharbhuja R Patti, and C_4: Hara Madhu sprayed with biostimulants factor-II *viz.*, T_1: Salicylic acid @ 200 ppm, T_2: Humic acid @ 900 ppm, T_3: Homobrassinolide @ 3ml/lit, T_4: Sodium nitrophenolate @ 0.3%, T_5: Seaweed extract @ 3ml/lit and T_6: Control in factorial randomized block design with 3 replications. Eight matured fruits per accession were randomly selected after harvest and placed on shelves in a ventilated room to determine the shelf life at room temperature which ranged from 34 - 38 °C. The fruits showing the visual signs of slight wrinkling and softening of the fruit due to desiccation were discarded on daily basis. The number of days up to which no signs of wrinkling and softening was noticed, regarded as shelf life. The management practices for this crop was followed according to the recommendations of Dr. YSR Horticultural University. The observations were recorded and statistical analysis was done using Window stat software. The results obtained were demonstrated below under the following sub heads.

Results and Discussion
Shelf life (days) at room temperature
The data pertaining to Shelf life (days) at room temperature was significantly varied with cultivars and treatments are presented in Table 1.
Amid the cultivars, highest shelf life was recorded in the cultivar Punjab Suneheri (C_1) (4.42). While lowest shelf life was recorded by the cultivar Hara Madhu (C_4) (3.30).
Between the different biostimulants studied, highest shelf life was recorded in the treatment with homobrassinolide @ 3 ml/lit (T_3) (3.96), followed by the treatment sodium nitrophenolate @ 0.3% (T_4) (3.76). While lowest shelf life was recorded in the treatment with control (T_6) (3.34).

Interaction amongst the treatment combinations showed that highest shelf life was observed in the treatment combination C_1T_3 (Homobrassinolide @ 3 ml/lit on Punjab Suneheri) (4.94). While lowest shelf life was observed in the treatment combination C_4T_6 (Control plot of Hara Madhu) (3.34).

Increase in shelf life by homobrassinolide is due to brassinosteroids play role in delaying senescence (Clouse and Sasse 1998, Rao *et al*. 2002) [2, 3]. Improved quality parameters *viz*., fruit firmness, ascorbic acid and TSS with homobrassinolide application was also showed positive impact on the shelf life of fruits. The results are in agreement with the findings reported by Zhu *et al*. (2010) [6] in jujube fruits, Sridhara S. *et al*. (2021) [5] in tomato.

Table 1: Effect of different biostimulants on shelf life (days) at room temperature of different cultivars of muskmelon.

Cultivars	Shelf life (days)						
	Biostimulants						
	T_1	**T_2**	**T_3**	**T_4**	**T_5**	**T_6**	**Mean**
C_1	4.12	4.07	4.94	4.73	4.24	4.01	4.42
C_2	3.32	3.24	3.63	3.41	3.20	3.12	3.36
C_3	3.34	3.43	3.78	3.54	3.31	3.21	3.48
C_4	3.34	3.23	3.48	3.34	3.11	3.01	3.30
Mean	3.53	3.49	3.96	3.76	3.47	3.34	
Factors	S.Em±		C.D at 5%				
C	0.02		0.06				
T	0.02		0.07				
C x T	0.05		0.14				

C_1: Punjab Suneheri
C_2: Papasa
C_3: Kharbhuja R Patti
C_4: Hara Madhu

T_1: Salicylic acid @ 200 ppm
T_2: Humic acid @ 900 ppm
T_3: Homobrassinolide @ 3 ml/lit
T_4: Sodium nitrophenolate @ 0.3%
T_5: Seaweed extract @ 3 ml/lit
T_6: Control

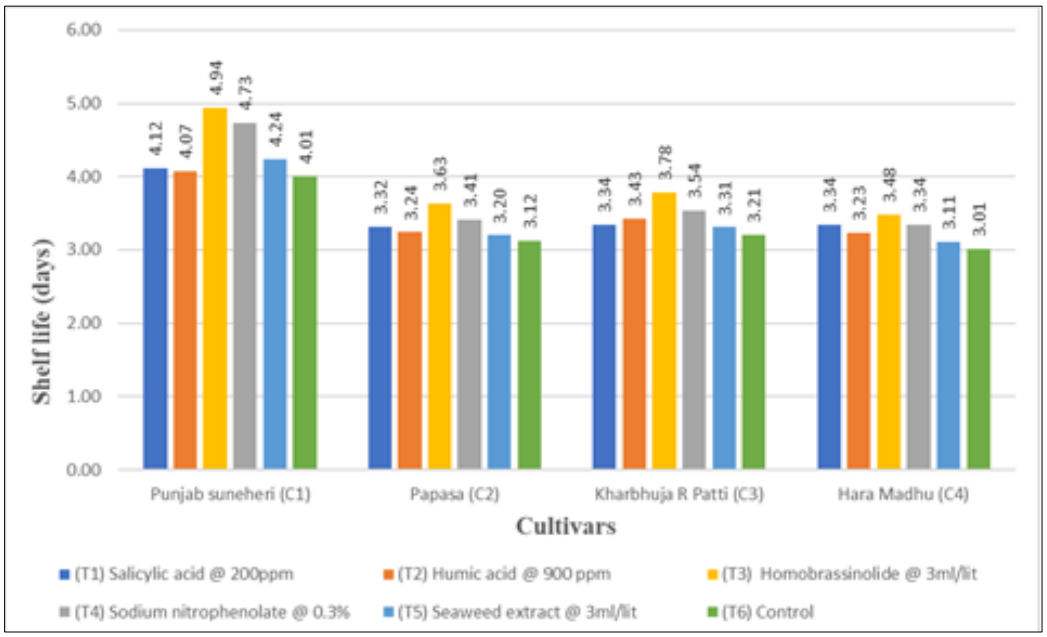

Fig 1: Effect of different biostimulants on shelf life (days) at room temperature of different cultivars muskmelon

Reference

1. Anonymous, National Horticulture Data Base. National Horticultural Board, Ministry of Agriculture, Government of India, 2019.
2. Clouse SD, Sasse JM. Brassinosteroids: Essential regulators of plant growth and development. Annual Review of Plant Physiology and Plant Molecular biology. 1998;49:427-451.
3. Rao SSR, Vardhini BV, Sujatha E, Anuradha S. Brassinosteroids-a new class of phytohormones. Current Science. 2002;82:1239-45.
4. Sebastian P, Schaefer H, Telford IRH, Renner SS. Cucumber (*Cucumis sativus*) and melon (*C. melo*) have numerous wild relatives in Asia and Australia, and the sister species of melon is from Australia. Proceedings of the National Academy of Sciences. USA. 2010;107(32):14269-73.
5. Sridhara S, Ramesh N, Gopakkali P, Paramesh V, Tamam N, Abdelbacki AM, *et al*. Application of homobrassinolide enhances growth, yield and quality of tomato. Saudi Journal of Biological Sciences. 2021;28(8):4800-06.
6. Zhu Z, Zhang Z, Qin G, Tian S. Effects of brassinosteroids on postharvest disease and senescence of jujube fruit in storage. Postharvest Biology and Technology. 2010;56:50-55.