

**CURRICULUM VITAE  
OF  
PROF. DR. SANTOSH KUMAR BOSE**



**01. Addresses**

**Mailing Address**

Professor, Department of Horticulture  
Patuakhali Science and Technology University, Dumki  
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**Residential Address**

A-2 (A), Residential Area  
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**Permanent Address**

Kamala Bhaban, 53 Sadar Road, Barishal  
Thana: Kotowali, District: Barishal, Bangladesh.

**02. Personal details**

**Name:** SANTOSH KUMAR BOSE

**Father's name:** Late Swapon Kumar Bose

**Mother's name:** Niva Rani Bose

**Date of Birth:** 31 May, 1981

**Nationality:** Bangladeshi

**National ID:** 19816125221271427

**Marital status:** Married

**Religion:** Sanaton

### 03. Educational Qualifications

Name of Degree	Name of Institute/ University	Division/CG PA	Passing Year
Ph.D. in Biochemical Engineering	Dalian Institute of Chemical Physics, University of Chinese Academy of Sciences (UCAS), China	3.86 (Scale 4.00)	2020
MS in Horticulture	Bangladesh Agricultural University, Mymensingh, Bangladesh.	3.742 (Scale 4.00)	2008
B.Sc.Ag.(Hons.)	Patuakhali Science and Technology University, Patuakhali-8602, Bangladesh	3.86 (Scale 4.00)	2006
Higher Secondary Certificate	Government Brajomohan College, Barishal, Bangladesh	First	1999
Secondary School Certificate	Garuria Secondary School, Barishal, Bangladesh	First	1996

### 04. Teaching Experience

Organizations	Name of the Post	Duration	Length of Service
Patuakhali Science and Technology University	Lecturer	01-11-2009 to 31-10-2011	2 years
Patuakhali Science and Technology University	Assistant Professor	01-11-2011 to 31-10-2016	5 years
Patuakhali Science and Technology University	Associate Professor	01-11-2016 to 31-10-2020	4 years
Patuakhali Science and Technology University	Professor	01-11-2020 to date	5 years
Total	16 years		

## **05. Research Interest**

- Innovative packaging techniques
- Ethylene management during fruit ripening and storage
- Cold chain management during transportation
- Nutritional quality management during postharvest
- Natural preservatives for maintaining quality and shelf life
- Food safety during postharvest
- Precision agriculture technologies

## **06. Research Experience**

### **(a) Skills and expertise**

- Postharvest Biology
- Fruit Quality
- RNA Extraction
- qRT-PCR
- Protein Extraction
- Antioxidant Activity determination
- Hormone Extraction
- Gene Expression
- Cell Wall Analysis
- SDS-PAGE
- Enzyme Activity
- Protein Quantification

### **(b) Research project**

**I have completed some research project as Principal Investigator which are given below;**

- A. Development and evaluation of biosafe edible coating effect to maintain postharvest quality of banana
- B. Evaluation of chitosan oligosaccharides treatment effect on postharvest quality of papaya
- C. Evaluation of different polysaccharides based edible coating effect on the postharvest quality of minimally processed vegetables
- D. Effect of Chitosan Based Edible Coating Enrich with Moringa Leaf Extract on the Storage Quality of Tomato

- E. Effect of different plant based edible coatings on the postharvest quality and shelf life of jujube
- F. Preservation of Nutritional Quality and Increase the Shelf Life of Banana by Using Chitosan Oligosaccharides.
- G. Effect of Chitosan Based Edible Coating Enrich with Aloe Vera Gel on the Storage quality of Jujube
- H. Effect of Edible Coatings on Postharvest Quality of Guava Fruits
- I. Effect of Chitosan Oligosaccharides (COS) on Postharvest Quality and Shelf Life of Mango
- J. “Effects of Plant Spacing and Mulching on Growth, Yield and Quality of Strawberry”
- K. “Effects of Tuber Size and Crowding on the Growth and Yield of Potato”
- L. “Effect of Growth Regulators on *in vitro* Multiplication of Potato Plant”

**(c) Research in MS**

Title of the thesis: **“Effects of different postharvest treatments on shelf-life extension of papaya”.**

**(d) Research in PhD**

Title of the thesis: **“Effects and mechanism of alginate oligosaccharide (AOS) on fruit quality and postharvest life of strawberry”**

**(e) Research Experience in Projects**

- I had been serving as Research Fellow in the project entitled **“Development of Technology for Increasing Growth, Yield and Quality of Banana”** for the period of 01-08-2006 to 30-01-2008.
- I had been serving as Research Fellow in the project entitled **“Role of some vitamins (A, D, B<sub>2</sub> and C) in the prevention of diarrhea and seasonal sickness among the school going children”**

**(f) Supervision of MS student: 20**

**(g) Research Award**

- Awarded as **“Excellent International Graduate of University of Chinese Academy of Sciences in 2020”**
- Third Prize Winner of **“Extended Petroleum Excellent Doctoral Scholarship in 2020”**, Dalian Institute of Chemical Physics, Dalian, China.
- CASTWAS president’s fellowship for pursuing PhD in University of Chinese

Academy of Sciences, China.

- Enjoyed National Science and Information and Communication Technology (NSICT) fellowship (2006-2007 and 2007-2008) for M.S. research work entitled “**Effects of different postharvest treatments on shelf life extension of papaya**”.

**(h) Research Publications: Total-44**

**I. International (24)**

- 1.** Mrinmoy Samadder, Prianka Howlader, **Santosh Kumar Bose**. (2025). Manures and Chitosan Oligosaccharides Application Enhanced Growth, Productivity and Economic Return of Cauliflower. *International Journal of Horticulture and Food Science*, 7(7), 112-125.
- 2.** **Santosh Kumar Bose**, Prianka Howlader, Md Mijanur Rahman Rajib, Wenxia Wang and Heng Yin. (2025). Alginate oligosaccharides (AOS) postharvest treatment suppresses cell wall degrading enzymes activity by inducing salicylic acid signaling pathway during storage of strawberry fruit. *Applied Fruit Science*, 67, 257.
- 3.** Shahnila Islam, Mohammad Ali, Prianka Howlader, Md. Nazmul Hasan Mehedi and **Santosh Kumar Bose**. (2025). Enhancing Garlic Productivity: Unveiling the potential of Alginate Oligosaccharides (AOS). *Agriculture Archives: an International Journal*, 4(1), 61-68.
- 4.** Prianka Howlader, **Santosh Kumar Bose**. (2025). Effect of Preharvest Application of Alginate Oligosaccharides on Postharvest Quality and Shelf Life of Tomato. *International Journal of Applied Agricultural Sciences*, 11(2), 46.62.
- 5.** Prianka Howlader and **Santosh Kumar Bose**. (2025). Salinity Mitigation of Tomato by Application of Chitosan and Organic Manures. *International Journal of Plant & Soil Science*, 37 (4), 41-54.
- 6.** Md. Sefat Ullah, Nishat Jahan Nitu, Prianka Howlader, Md Nazmul Hasan Mehedi, **Santosh Kumar Bose**. (2025). Natural Preservatives Maintained Postharvest Quality, Reduced Decay Percentage and Increased Shelf Life of Mango. *International Journal of Horticultural Science and Technology* (2025) Vol. 12, No. 4, pp. 1261-1280.
- 7.** Wang Wenxia#, **Santosh Kumar Bose**#, Prianka Howlader, Jia Xiaochen, Yin Heng. (2025). A Combined Analysis of Transcriptome and Proteome Reveals the Regulation Mechanism of Alginate Oligosaccharides on Alleviating Energy Deficit in Postharvest Strawberry. *Postharvest Biology and Technology*, 220 (2025), 113302. # **Authors contributed equally.**

- 8.** Nishat Jahan Nitu, Md. Sefat Ullah, Prianka Howlader, Md. Nazmul Hasan Mehedi, Habiba Zannat Meem and **Santosh Kumar Bose**\*(2024). Chitosan oligosaccharides maintained postharvest quality and increased shelf life of mango. *Journal of Horticulture and Postharvest Research*, 8(1): 43-66.
- 9.** Humaira Islam, Dali Rani Mondal, Muhammad Abdul Malek, Prianka Howlader and **Santosh Kumar Bose** (2023). Effects of Alginate Oligosaccharides on Growth and Yield of Onion. *International Journal of Innovative Research*, 8(2): 40-47.
- 10.** Sarmin Afroz Supa, Prianka Howlader, Mohammad Ali, Rumina Afroz Rupa and **Santosh Kumar Bose** (2023). Edible coatings maintained postharvest quality and increased shelf life of guava fruits. *Journal of Horticulture and Postharvest Research*, 7: 15-34.
- 11.** Dali Rani Mondal, Muhammad Abdul Malek, **Santosh Kumar Bose**\* and Md. Masudur Rahman (2023). Effect of Postharvest Treatments on Shelf Life and Physico-Chemical Properties of Mango cv. Amrapali. *International Journal of Innovative Research*, 8(1): 20–25.
- 12.** **Santosh Kumar Bose**, Prianka Howlader, Wang Wenxia, Yin Heng. (2021) Oligosaccharide is a Promising Natural Preservative for Improving Postharvest Preservation of Fruit: A Review. *Food Chemistry*. <https://doi.org/10.1016/j.foodchem.2020.128178>
- 13.** **Santosh Kumar Bose**, Yanqiu He, Prianka Howlader, Wenxia Wang, Heng Yin (2021). The N-glycan processing enzymes beta-D-N-acetylhexosaminidase are involved in ripening-associated softening in strawberry fruit. *Journal of Food Science and Technology*. DOI: 10.1007/s13197-020-04576-2.
- 14.** **Santosh Kumar Bose**, Prianka Howlader, Wang Wenxia, Jia Xiaochen, Yin Heng. (2019). Alginate oligosaccharide postharvest treatment preserve fruit quality and increase storage life via abscisic acid signaling in strawberry. *Food Chemistry*, 283, 665-674.
- 15.** **Santosh Kumar Bose**, Prianka Howlader (2020). Melatonin Plays Multifunctional Role in Horticultural Crops Against Environmental Stresses: A Review. *Environmental and Experimental Botany*. *Environmental and Experimental Botany* 176 (2020) 104063. <https://doi.org/10.1016/j.envexpbot.2020.104063>.

- 16. Santosh Kumar Bose**, Shakil Ahmed, Prianka Howlader, Mohammad Ali. (2019). Flowering, Fruiting Behavior and Nutritional Quality of Selected Guava Genotypes. International Journal of Horticultural Science and Technology. Vol. 6, No. 1; June 2019, pp 11-25.
- 17. Santosh Kumar Bose**, Kakoli Ghosh and Prianka Howlader. (2019). Effect of Variety and Rootstock Age on the Success and Survivability of Epicotyl Grafting in Mango. Journal of Agricultural Research Advances, 1(1), 13-25.
- 18. He Yanqiu\***, **Santosh Kumar Bose\***, Wang Mengyu, Liu Tongmei, Wang Wenxia, Lu Hang, Yin Heng (2019). Effects of chitosan oligosaccharides postharvest treatment on the quality and ripening related gene expression of cultivated strawberry fruits. Journal of Berry Research 9, 11-25.[\*Authors contributed equally]
- 19. Yanqiu He\***, **Santosh Kumar Bose\***, Wenxia Wang, Xiaochen Jia, Hang Lu, and Heng Yin. (2018). Pre-Harvest Treatment of Chitosan Oligosaccharides Improved Strawberry Fruit Quality. International Journal of Molecular Sciences 19, 2194; <https://doi.org/10.3390/ijms19082194>. [\*Authors contributed equally]
- 20. Prianka Howlader\***, **Santosh Kumar Bose\***, Chunguang Zhang, XiaochenJia, WenxiaWang, HengYin (2020). Pectin oligosaccharide (POS) induce resistance in *Arabidopsis thaliana* through salicylic acid-mediated signaling pathway against *Pseudomonas syringae* pv.tomato DC3000. Physiological and Molecular Plant Pathology. <https://doi.org/10.1016/j.pmpp.2020.101483>. [\*Authors contributed equally].
- 21. Prianka Howlader**, **Santosh Kumar Bose**, Xiaochen Jia, Chunlai Zhang, Wenxia Wang, Heng Yin. (2020). Oligogalacturonides induce resistance in *Arabidopsis thaliana* by triggering salicylic acid and jasmonic acid pathways against Pst DC3000. International Journal of Biological Macromolecules, 164: 4054-4064.
- 22. Xiaochen Jia**, Haihong Zeng, **Santosh Kumar Bose**, Wenxia Wang, Heng Yin. (2020). Chitosan oligosaccharide induces resistance to *Pst* DC3000 in *Arabidopsis* via a non-canonical N-glycosylation regulation pattern. Carbohydrate Polymer, 250: 116939.
- 23. Xiaochen Jia**, Hongqiang Qin, **Santosh Kumar Bose**, Tongmei Liu, Jinxia He, Shangqiang Xie, Mingliang Ye, Heng Yin (2020). Proteomics analysis reveals the defense priming effect of chitosan oligosaccharides in *Arabidopsis-Pst* DC3000 interaction. Plant Physiology and Biochemistry 149, 301–312.

- 24.** Ruixin Li, Jinxia He, Hongguo Xie, Wenxia Wang, **Santosh Kumar Bose**, Yeqing Sun, Jianen Hu, Heng Yin. (2019). Effects of chitosan nanoparticles on seed germination and seedling growth of wheat (*Triticum aestivum* L.). International Journal of Biological Macromolecules, 126 (2019) 91–100.

## (II) National (20)

- 25.** P. Howlader, **S. K. Bose**, M. Ali and M.M. Robbani. (2016). *In-vitro* plantlet regeneration of strawberry through runner tip culture. *Bangladesh Hort., Vol. 2 No. 2 (Series-2): 51-57.*
- 26.** S. Akter, **S. K. Bose**, M. A. Malek, P. Howlader and F. P. Sanda. (2016). Effect of organic manures and gibberellic acid (GA<sub>3</sub>) on the growth and yield of garlic. *J. Bangladesh Soc. Agric. Sci. Technol., 13(1-4):5-10.*
- 27.** M. H. Kabir, **S. K. Bose**, M. Ali, M. Robbani and P. Howlader. (2016). Effect of plant spacing and potassium on the yield and yield attributes of broccoli. *J. Bangladesh Soc. Agric. Sci. Technol., 13(1-4):11-14.*
- 28.** P. Howlader, **S. K. Bose**, M. Ali, M. M. Robbani, and M. Papry. (2014). *In vitro* callus induction and plantlets regeneration in strawberry. *J. Bangladesh Soc. Agric. Sci. Technol., 11 (3 & 4), 53-56.*
- 29.** K. N. Islam, M. Robbani, **S. K. Bose**, M. M. Islam and Z. Rahman. (2014). Effect of postharvest treatment on physico-chemical changes in guava fruits during storage. *J. Patuakhali Sci. and Tech. Univ. 5 (2): 71-79.*
- 30.** **S. K. Bose**, M. Robbani and M. Ali. (2014). Effects of postharvest treatments on shelf life extension of guava. *J. Bangladesh Soc. Agric. Sci. Technol., 11 (1 & 2), 141-144.*
- 31.** **S.K. Bose**, P. Howlader, A. B. M. M. M. Khan, M. R. Mallik and M. N. Kayosar. (2014). Growth and yield of cabbage as influenced by different sources of plant nutrients. *J. Bangladesh Soc. Agric. Sci. Technol., (11 (1 & 2), 145-149.*
- 32.** M. A. Suem, M. Ali, M. Robbani, **S. K. Bose** and M. S. Rahman. (2013). Growth and yield of onion as influenced by organic manures. *J. Agrofor. Environ. 7 (2): 175-178.*
- 33.** S. R. Jewel, **S. K. Bose**, M. Ali and M. M. Robbani. (2013). Effect of tuber size and crowding on the growth and yield of potato. *J. Bangladesh Soc. Agric. Sci. Technol., 10 (1 & 2):175-179.*
- 34.** L. C. Sen, **S. K. Bose**, A. B. M. M. M. Khan, M. S. Hossain and S. K. Mali. (2012). Identification of *Pythium spp.* from aerobic rice field. *J. Bangladesh Soc. Agric. Sci. Technol., 9(3&4):83-8.*



- 35.** L. C. Sen, **S. K. Bose**, A. B. M. M. M. Khan, M. S. Hossain and S. K. Mali. (2012). The pathogenicity of different *Pythium spp.* on aerobic rice seedlings. *J. Bangladesh Soc. Agric. Sci. Technol.*, 9(3&4):88-95.
- 36.** S. K. Saha, A.B. M. M. M. Khan, L. C. Sen, **S. K. Bose** and R. Mahmood. (2012). Growth performances of Boro hybrid rice genotypes in Bangladesh. *J. Bangladesh Soc. Agric. Sci. Technol.*, 9(3&4):123-126.
- 37.** A.B.M.M.M. Khan, **S. K. Bose** and M. H. K. Howlader. (2011). Performances of Hybrid rice at Patuakhali region in Boro Season. *J. Bangladesh Soc. Agric. Sci. Technol.*, 8(1&2):149-152.
- 38.** **S. K. Bose**, A. B. M. M. M. Khan and A. A. Jewel. (2010). Yield and yield attributes of tomato as influenced by stem pruning and fruit thinning. *J. Bangladesh Soc. Agric. Sci. Technol.*, 7(1&2):69-72.
- 39.** A. A. Sharif, M. A. M. Miah, M.I. Hossain and **S. K. Bose**. (2010). Effect of spacing and K<sub>2</sub>O on the growth and yield of Broccoli; *J. Sher-e-Bangla Agric. Univ.*, 4(1): 64-68.
- 40.** M. R. Sikder, **S. K. Bose**, M.R. Mahmud and A. A. Jewel. (2010). Effect of planting date and spacing on the growth and yield of indian spinach. *J. Bangladesh Soc. Agric. Sci. Technol.*, 4(3&4):73-76.
- 41.** M.Z. Haque, M. Ali, M.N.Kayasar, M. M. M. R. Rajib and **S. K. Bose**. (2009). Effects of staking methods on the yield and yield attributes of tomato varieties. *J. Bangladesh Soc. Agric. Sci. Technol.*, 6(1&2):45-49.
- 42.** M. Mahabub-Al-Kawsar, M. H. Kabir, **S. K. Bose**, A. Iqbal and M. M. Al Hasan. (2008). Varietal performances of some BARI released tomato varieties under different date of planting. *Bangladesh J. Environ. Sci. Vol. 15*, 208-213.
- 43.** **S. K. Bose** and M.F. Mondal. (2007). Effects of different treatments on incidence and severity of post-harvest diseases and shelf life of papaya; *J. Bangladesh Soc. Agric. Sci. Technol.*, 4(3&4):127-130.
- 44.** M.F. Mondal, **S. K. Bose**, M. H. Rahman and T. Haque. (2007). Physico-chemical changes in papaya fruits during storage; *J. Bangladesh Soc. Agric. Sci. Technol.*, 4(3&4): 145-148.

### **Research going to be Published:**

- Preservation of nutritional quality and increase the shelf life of banana by using chitosan oligosaccharides (Submitted in Future Postharvest and Foods))
- Melatonin: An Eco-friendly Biomolecule for Maintaining Postharvest Quality and Enhancing Storage Life of Horticultural Crops (Submitted in Scientia Horticulture Journal)

### **(i) Editorial/ Review works**

- **Associate Editor** in ‘Journal of Patuakhali Science and Technology University’(ISSN-1996-4501) from 2021 to 2024.
- Editorial board member of Journal of Patuakhali Science and Technology University’(ISSN-1996-4501) from 2024 to date.
- **Reviewer** of journal article of Patuakhali Science and Technology University.
- **Reviewer** of journal article of **Flavor and Fragrance Journal**
- **Reviewer** of journal article of **Journal of Horticulture and Postharvest Research**
- **Reviewer** of journal article of **International Journal of Food Science and Technology**
- **Reviewer** of journal article of **MDPI publishers**

### **(j) Monitoring and Evaluation Works**

- Evaluation of PSTU funded projects
- Evaluation of HSTU funded projects

### **(k) Conferences**

1. **Participated “5<sup>th</sup> International Conference on Food Safety and Health”** which was held on 18 February 2023, Dhaka, Bangladesh.
2. Participated on **“The 1<sup>st</sup> international congress of biological control, biological control for a healthy planet”** which was held on 14-16 May 2018, Beijing, China.
3. Participated International Conference on **“Role of Horticulture and Agroforestry in Poverty reduction”** held on 17-18 March 2008, Bangladesh Agricultural University campus, Mymensingh, Bangladesh.
4. Participated International Conference on **“Golden Rice: Present and Future Perspectives”** Which was held on 19<sup>th</sup> March 2008, Conference Hall, Faculty of Agriculture, Bangladesh Agricultural University, Mymensingh, Bangladesh.

5. Participated International Conference on “**Transgenic Crops Alleviating Hunger and Malnutrition**” which was held on 19<sup>th</sup> March 2008, Conference Hall, Bangladesh Institute of Nuclear Agriculture (BINA) Mymensingh-2200, Bangladesh.

**(I) Poster Presentation**

Presented poster entitled “**Improvement of postharvest quality of strawberry by applying oligosaccharide at pre and postharvest conditions**” on the 1<sup>st</sup> international congress of biological control, biological control for a healthy planet, held on 14-16 May 2018, Beijing, China.

**7. Training Related Experiences**

**(A) Participated as trainee**

1. Completed the “**Postgraduate Certificate Course on Seed Technology**” at Patuakhali Science & Technology University, Dumki, Patuakhali, Bangladesh during 12 January, 2011 to 11 April, 2011.
2. Completed training course on “**Scientific Report Writing**” from Graduate Training Institute (GTI), Mymensingh, during 04 August to 9th August 2007.
3. Completed training course on “**Professional Training on Disaster Management**” held during 08-12 November, 2009, organized by Environmental Science and Disaster Management, Patuakhali Science & Technology University, Dumki, Patuakhali Bangladesh.
4. Completed training course on “**Basics of MS Office**” from Graduate Training Institute (GTI), during 24 February to 08 March 2007
5. Completed training course on “**Administrative and Financial Management for PSTU Teachers**” held from 21-23 and 29-30 October 2010, at PSTU, Dumki, Patuakhali.
6. Completed the “**Sales Skills Training Program**” at 30 November to 2 December, 2008, organized by Bayer Crop Science Ltd, Bangladesh.
7. Training on **Curriculum Development for the Faculty of Agriculture** organized by IQAC, PSTU during 18 to 20 February 2016.
8. Training on **Teaching-Learning of Agricultural Science Education of PSTU** organized by IQAC, PSTU during 22 September to 28 September 2021.

**(B) Participated as trainer**

- i. **Resource Person:** Training on **Post Graduate Diploma in Disaster Management** program organized by the Department of Environmental Science and Disaster Management, PSTU in collaboration with CDMP, Ministry of Food and Disaster Management (MoDM), Government of the Peoples' Republic of Bangladesh.
- ii. **Resource Person:** Training on **Post Graduate Diploma in Seed Technology** program organized by the Department of Agronomy, PSTU in collaboration with UNDP.
- iii. **Resource Person:** Training on **Administrative Management** organized by PSTU.

**08. Language Proficiency:** Excellent in Bengali and English.

**09. Computer Proficiency:** MS Word, MS Excel, MS Power point, SPSS, MSTAT

**10. Foreign Country Visited:** India, China.

**11. Examiner**

- Patuakhali Science and Technology University, Bangladesh.
- Haji Danesh Science and Technology University, Dinajpur, Bangladesh.

**12. Courses teach in PSTU**

MS and PhD level	B. Sc. Ag. (Hons.) level
<ul style="list-style-type: none"><li>• Advanced Fruit Production</li><li>• Postharvest Technology of Fruits and Vegetables</li><li>• Processing of Horticultural Crops</li><li>• Horticulture and Human Nutrition</li><li>• Homestead Horticulture</li></ul>	<ul style="list-style-type: none"><li>• Principles and Practices of Horticulture</li><li>• Ornamental Horticulture</li><li>• Spices, Medicinal and Plantation Crops</li><li>• Horticultural Seed Technology and Postharvest Management</li><li>• Fruit Production</li><li>• Vegetables Production</li></ul>

### 13. Referees

#### 1. Dr. Heng Yin

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#### 2. Dr. Yongjin Zhou

##### Professor, Graduate Advisor

Zhang Dayu Young Professor

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of Sciences (CAS)

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#### 3. Dr. Mahbub Robbani

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Signature

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