Available online at
http://agrospheresmagazine.vitalbiotech.org/

ISSN (E): 2582 – 7022

Agrospheres:e- Newsletter, (2025) *6*(4), 53-55

Article ID: 773

Importance of Sweet Corn and Its Cultivation under Organic Farming in Southern Rajasthan

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Article History
Received: 1.04.2025
Revised: 5.04.2025
Accepted: 10.04.2025

INTRODUCTION

Maize (*Zea mays* L.), commonly known as corn, is one of the most significant cereal crops globally after rice and wheat. In India, maize plays a critical role in food security, livestock feed, and industrial applications. Among the various types of maize, sweet corn (*Zea mays saccharata*) stands out as a high-value specialty crop. Unlike traditional maize, it is harvested at the milky stage when kernels are tender, sweet, and succulent.

In recent years, organic farming has gained momentum due to growing concerns about soil degradation, chemical residues in food, and the need for sustainable agriculture. Organic farming systems, which emphasize ecological balance and soil health, provide an ideal platform for cultivating crops like sweet corn, particularly in regions like Southern Rajasthan, which are ecologically sensitive and agriculturally diverse.

Importance of Sweet Corn

1. Nutritional Value

Sweet corn is a rich source of dietary fiber, vitamin A, vitamin C, antioxidants, and essential minerals. Its soft, sweet kernels make it a popular food choice across age groups. It is used in soups, salads, roasted snacks, corn syrup, and frozen food items.

2. Economic Potential

Sweet corn fetches 2–3 times higher market prices compared to traditional maize. It has a ready market in urban areas and through food processing industries. With increasing health consciousness, demand for fresh, organically grown sweet corn is rapidly increasing.

3. Multiple Uses

After harvesting green cobs, the remaining biomass serves as excellent **green fodder** for livestock. Thus, it contributes both to human nutrition and animal husbandry.

4. Short Duration Crop

Sweet corn matures in 70–90 days, making it suitable for inclusion in crop rotations or as an intercrop with legumes in organic systems.

ISSN (E): 2582 – 7022

Scope in Southern Rajasthan

The districts of Udaipur, Banswara, Dungarpur, Chittorgarh, and Pratapgarh in Southern Rajasthan have a long history of maize cultivation. The climate—marked by monsoon rains, moderate temperatures, and light soils—is well-suited for sweet corn. Most farmers in these tribal-dominated districts practice rainfed farming, and sweet corn fits well as a kharif crop or early rabi option in irrigated belts.

Given that Southern Rajasthan is also home to several smallholder and marginal farmers, the low-input and high-return nature of organic sweet corn farming makes it an ideal crop.

Organic Farming and Sweet Corn Production

Organic farming avoids synthetic fertilizers, pesticides, and genetically modified organisms (GMOs), instead promoting natural nutrient cycling, soil biodiversity, and eco-friendly inputs.

Sweet corn, being a nutrient-demanding crop, especially for nitrogen, requires well-planned organic nutrient management to achieve good yields.

Organic Inputs for Nutrient Management:

Input Type	Description and Benefits
Farm Yard Manure (FYM)	Improves soil structure, water retention, and supplies essential nutrients.
Vermicompost	Rich in macro & micronutrients, plant hormones, beneficial microbes.
Neem Cake	Enhances nitrogen availability, pest control, and adds micronutrients.
Jeevamrit	Fermented cow-based liquid manure that boosts microbial activity.
Vermiwash	A foliar spray that provides quick nutrients and plant growth hormones.
Green Manure	Leguminous crops like dhaincha or sunhemp fix atmospheric nitrogen.
Mulching (crop residues)	Conserves soil moisture, controls weed, adds organic carbon.

Cultivation Practices under Organic Farming

1. Land Preparation

Plough the land well and incorporate FYM (10–12 tons/ha) or compost at least 15 days before sowing. Ensure good drainage, as sweet corn is sensitive to waterlogging.

2. Sowing

- **Time**: Last week of June to first week of July (with onset of monsoon).
- **Spacing**: 60 cm × 20 cm for optimal plant population.
- **Seed Rate**: 8–10 kg/ha.
- **Seed Treatment**: Use a slurry of cow urine and neem leaf extract to protect seeds from seed-borne pathogens.

3. Nutrient Application

- Apply vermicompost (2–3 t/ha) along with neem cake (250 kg/ha).
- Supplement with Jeevamrit twice a month for improved microbial activity and nutrient uptake.
- Foliar spray of Vermiwash (5%) at 25 and 45 days after sowing.

4. Weed and Moisture Management

- Use crop residue mulch to retain soil moisture and suppress weeds.
- Intercropping with legumes helps in natural nitrogen fixation and weed suppression.

5. Pest and Disease Control

- Use neem oil sprays, buttermilk sprays, or trichoderma for disease and pest management.
- Encourage beneficial insects by maintaining flowering weeds at field edges.

6. Harvesting

- Harvest sweet corn 18–22 days after silking, when kernels are at the milky stage.
- Immediate market transport is crucial due to the perishable nature of sweet corn.

Yield and Economic Benefits

Under good organic practices, sweet corn can yield 35–45 quintals/ha of green cobs. The current market price for sweet corn cobs (retail) ranges between ₹15–₹25 per piece, depending on size and quality.

The low cost of organic inputs, premium market value, and dual-purpose nature (grain + fodder) make sweet corn a profitable option for farmers in Southern Rajasthan.

ISSN (E): 2582 – 7022

CONCLUSION

Sweet corn cultivation under organic farming presents a golden opportunity for farmers in Southern Rajasthan. With rising demand for health-oriented food and sustainable agricultural practices, sweet corn offers high returns, nutritional benefits, and ecological advantages. By integrating traditional knowledge with scientific organic methods, farmers can ensure soil health, better incomes, and long-term agricultural sustainability. Promoting sweet corn through organic practices is not just a step towards better farming—it's a step towards healthier lives and greener futures.