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A Spicy Exploration: Popular Chilli Varieties Grown in Gujarat

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Abstract

Capsicum annuum, a widely cultivated species belonging to the Solanaceae family, holds significant economic and nutritional value. Gujarat, a major agricultural state in western India, holds a significant position in chilli cultivation, contributing both to the domestic market and spice export industry. Gujarat's climate is particularly conducive to the cultivation of diverse varieties of Capsicum annuum, commonly known as bell peppers or sweet peppers. This versatile plant is not only valued for its culinary uses but also for its impressive array of health benefits, largely attributed to its bioactive compounds. Capsicum annuum is rich in antioxidants, which play a crucial role in neutralizing harmful free radicals in the body, thereby reducing oxidative stress. Additionally, it contains antimicrobial agents that can help combat infections and support immune health. The plant is also recognized for its potential anticarcinogenic properties, which may aid in reducing the risk of certain cancers by inhibiting cancer cell growth.

This review explores the diversity of popular chilli (Capsicum annuum L.) varieties cultivated across the state, ranging from improved hybrids released by institutions like Anand Agricultural University (AAU) to traditional desi varieties that reflect regional preferences and cultural practices. The paper highlights key varieties such as GVC-101, GAVC-112, and Anand Tej, bred for high yield, disease resistance, and market adaptability. It also sheds light on prominent local cultivars like Jwala, Bhavnagri, and Kathiawadi mirch, known for their pungency, flavor, and traditional culinary uses. In addition, the growing adoption of nationally recognized varieties like Guntur Teja and Byadgi in Gujarat is discussed, showcasing the state's role in supporting the spice industry. The review aims to provide a provide an overview of each of these varieties with unique characteristics in terms of flavour, colour, and culinary applications and emphasizing the need for sustainable chilli cultivation through the integration of traditional knowledge and scientific advancements.

Keywords: Varieties, Chillies, Gujarat, Capsicum

1. Introduction:

The genus Capsicum, belonging to Solanaceae family, includes a diverse array of both sweet and hot chilli peppers, boasting a rich history that stretches back to approximately 6000-6500 BCE. These peppers have long served not only as popular culinary spices but also as vital components in traditional medicine, highlighting their significance in human culture and global cuisines over millennia. In contemporary society, Capsicum varieties hold considerable commercial value; it is estimated that around one-fourth of the world's population incorporates these peppers into their diets regularly (Barboza et al., 2022).



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In addition to being sold fresh, chili peppers are processed into a variety of products that enhance their culinary versatility. These include ground powders such as paprika and cayenne, flavorful sauces like salsa and hot sauce, and preserved forms such as pickles and chutneys. This transformation into diverse products not only caters to varying tastes and preferences but also expands their usability in kitchens around the world, making them staples in numerous culinary traditions (Carrizo et al., 2016; Parvez, 2017).

Gujarat's agricultural landscape is marked by its remarkable diversity and productivity, particularly in the cultivation of Capsicum species, which include various types of peppers. This state not only plays a crucial role in meeting local food needs but also contributes substantially to global food systems. Among these, Capsicum spp., commonly known as peppers, stands out as one of the most significant spices cultivated in the region. Widely utilized across the country, these peppers are essential to various culinary traditions and have garnered attention for their flavor and versatility (Shinoj & Mathur, 2006; Salehi et al., 2018; Herath et al., 2020). The cultivation of Capsicum spp. in Gujarat showcases the region's rich agrarian tradition and reflects its deep cultural heritage, where agriculture is intertwined with the way of life. Moreover, the state's favorable climate and innovative farming practices enhance its economic potential, enabling farmers to thrive in a competitive market. As a result, Gujarat stands out as a key contributor to the agricultural sector, fostering food security and economic growth both domestically and internationally. Gujarat ranks sixth in chilli production, with 27.27 kilotonnes produced in 2023-24 over an area of 140.59 km², a slight decrease from the 30.65 kilotonnes produced in 2022-23. Major chilli-producing regions include Kheda and Mehsana (https://knowledge.desikheti.com/top-10-chilli-producing-states-in-india).

Although numerous studies have been conducted on the Capsicum species at the national level, there are gaps in research at the state level. Therefore, this review aims to explore the historical context, nutritional composition, and phytochemical profiles of various commonly cultivated varieties of Capsicum annuum in Gujarat State. The findings will enhance our understanding of the nutritional value of peppers and the active phytochemical constituents that contribute to their therapeutic potential.

2. Agro-Climatic Suitability of Gujarat for Chilli Cultivation

Gujarat is a vibrant state located on the western coast of India, renowned for its unique geography and diverse climate, which together contribute to its rich array of natural resources. Spanning an impressive coastline of approximately 1,600 kilometers along the Arabian Sea, Gujarat not only boasts stunning coastal landscapes but also plays a pivotal role in India's maritime trade.

The state's agricultural sector is equally diverse, benefiting from its tropical and subtropical climate, which is conducive to the cultivation of a variety of crops across different seasons. Gujarat provides diverse climatic conditions—ranging from semi-arid in Saurashtra and Kutch to sub-humid in South Gujarat—making it suitable for growing a variety of Capsicum annuum cultivars. Thus, Gujarat has a favorable agro-climatic environment for chilli cultivation, particularly in the regions of Saurashtra (Rajkot, Junagadh, Jamnagar), Central Gujarat (Kheda, Anand) and North Gujarat (Banaskantha, Sabarkantha, Mehsana).

Chilli thrives in warm and dry climates, requiring well-drained loamy or black cotton soils. The average temperature range of 20–30°C and moderate rainfall supports both Kharif and Rabi cultivation cycles. It



is usually sown around June–July (Kharif) and harvested by December–January. Some farmers also go for a Rabi crop depending on irrigation.

3. Generic Epithet:

The term "Capsicum" is believed to have several possible origins. It may derive from the Greek word "kapsimo," which translates to "to bite" or "to swallow." (Mandala & Nutakki, 2020). This Greek-rooted term is linked to the Latin word "kapto," meaning "to bite," and reflects the spiciness of chili peppers when consumed. Another theory suggests that it comes from the Latin word "capsa," meaning "box," which describes the shape of the fruit in various species (Hultquist, 2019). The common name "chile" is a variation of "chil," derived from the Nahuatl (Aztec) dialect (La jiao, 2020). This versatile botanical spice can be enjoyed in raw, dried, or cooked forms, and is commonly used in making pastes, pickles, and sauces.

The genus Capsicum includes a diverse range of species, with estimates varying from 25 to 200. Among these, five species stand out as the most commonly cultivated: Capsicum annuum L., C. frutescens L., C. chinense Jacq., C. baccatum L., and C. pubescens L. (Swamy, 2023; Roy, 2016). Of these, Capsicum annuum is particularly significant, as it is widely cultivated in various regions of the world, spanning tropical, subtropical, and temperate climates. This species is prized for its flavourful and versatile berries, which can be used in a range of culinary applications, as well as for its seeds (Kraft et al., 2014).

4. Historical Background:

Chili has been recognized as a staple in human nutrition since the early days of agriculture (Pawar et al., 2011; Pandit et al., 2020). It is believed to have originated in the northern Amazon Basin and has since proliferated throughout Central America, South America, the West Indies, and various regions of the United States. The Tepin or Chiltepin pepper (Capsicum annuum var. glabriusculum), commonly referred to as "Mother Chili," is the oldest known variety (Mehta, 2017). Indigenous to the Americas, it has been cultivated for thousands of years and has ultimately spread around the globe.

Numerous paleo-archeological reports indicate that the origin of the chili pepper dates back to around 7500 B.C., with evidence found in cave excavations in Mexico and prehistoric burial sites in Peru (Pandit et al., 2020). Historical records suggest that chili peppers were domesticated over 6,000 years ago.

Christopher Columbus introduced chili to the rest of the world, mistakenly identifying it as black pepper. In 1494, Diego Alvarez Chanca was the first to bring chili peppers to Spain. From Spain, chili was subsequently introduced to South Asian countries such as India and China, where it quickly became an essential ingredient in various local cuisines, eventually reaching Japan.

In the 16th century, Portuguese traders facilitated the transfer of chilies from South America to India through their trading hub in Goa. Following Vasco da Gama's arrival on Indian shores with this aromatic spice, local farmers began cultivating chilies along the western coast. This cultivation gradually spread northward, and today, India stands as the world's largest producer and exporter of chili peppers, shipping to countries including the USA, Canada, the UK, Saudi Arabia, Singapore, and many others around the globe.



5. Capsicum annuum :

In India, Capsicum annuum is especially favored and is cultivated for both its pungent varieties, commonly known as hot peppers, and its non-pungent counterparts, often referred to as bell peppers. The cultivation of these peppers not only contributes to local diets but also supports agricultural economies, making them a vital component of the region's agricultural landscape.

Capsicum annuum, a vibrant annual herbaceous plant from the family Solanaceae, is celebrated for its remarkable pungency, captivating aroma, and a stunning array of colors. Its fruits showcase an impressive diversity, ranging from large and sweet varieties to small, tangy ones, and even those that pack an intense heat or are completely bland. These fruits come in numerous shapes and sizes, each bearing a myriad of names, even within the same language (Swamy, 2023). The visual appeal of Capsicum annuum is further enhanced by its rich color palette, which stems from a variety of natural pigments. These include the bright green of chlorophyll, the deep hues of anthocyanins (present in violet and purple varieties), and the warm tones of carotenoids, such as α -carotene, β -carotene, zeaxanthin, lutein, and β -cryptoxanthin, which contribute to the stunning yellow and orange fruits (Gomez-Garcia and Ochoa-Alejo, 2013; Dhamodharan et al., 2022). This remarkable genetic and phenotypic diversity not only adds flavor and aesthetic appeal but also plays a significant role in culinary traditions across the globe.

Morphological features of the fruit:

The efficiency of distinct characters such as inflorescence and seed color to differentiate the various Capsicum spp. has been described by Ortiz et al. (2010). Chillies of different shapes and sizes are available. Generally, it is oblong or conical in shape, 4-7 mm wide and 10-20 mm in length. It has a long straight pedicel and calyx with five cup-shaped teeth which are attached to the smooth glacial pericarp. Pericarp is wrinkled, thin, and orange-red, too dark in color. Internally, a membranous septum separates the pericarp into two cells. Each cell contains around 5-10 small, disc-shaped, and whitish-yellow seeds. Fruiting time is between 60 to 80 days (Bhalabhai et. al., 2021).

Anatomical features of the fruit:

The cross-section of a chili fruit reveals an outer layer of epidermis composed of 5-7 rows of subrectangular cells, followed by the mesocarp, which consists of cellulosic polygonal parenchyma. Within the mesocarp, one can find crystals of calcium oxalate and small vascular bundles. Additionally, it contains chromatophores, which appear as yellowish droplets of oil. Beneath the mesocarp lies a layer of large cellulosic cells. The endocarp of the fruit features tissues with lignin deposition, curved cells, and flecks of sclerenchyma. The septum is predominantly made up of thin-walled parenchyma (Rangari, V. D. 2006).

6. Nutritional Value:

Capsicum is recognized as a nutritional powerhouse, offering a wealth of essential nutrients and bioactive compounds that contribute to a healthy diet. It is an excellent source of carbohydrates, vitamins, and minerals, making it a versatile addition to meals. Among its varied nutritional profile, capsicum is rich in



phytochemicals, which are naturally occurring compounds known for their beneficial effects on health. (Akhtar et. al., 2021).

The plant's unique chemical composition includes a diverse range of phenolic compounds, flavonoids, alkaloids, and carotenoids. These compounds have been linked to numerous health benefits, such as antiinflammatory effects, antioxidant properties, and potential protective roles against chronic diseases. For instance, carotenoids, including beta-carotene, are particularly noted for their role in promoting eye health and enhancing immune function.

Moreover, capsicum seeds stand out for their nutritional richness; they contain a significant amount of proteins, essential fatty acids, dietary fiber, and vital minerals. These components contribute not only to overall well-being but also to improved digestion and metabolic health. Additionally, capsicum is a noteworthy source of niacin (vitamin B3) and vitamin B6, both of which play critical roles in energy metabolism by aiding in the conversion of food into energy and supporting various enzymatic processes within the body (Bhalabhai et. al., 2021).

In summary, incorporating capsicum into diet can enhance nutritional intake while providing various health benefits, making it a valuable addition to any meal plan.

7. Phytochemical Profile:

Pungency, a distinctive and notable characteristic of capsicum, arises from the presence of capsaicinoids, a fascinating class of alkaloids synthesized during the plant's secondary metabolism. Among these compounds, capsaicin stands out as the primary agent responsible for the intense heat associated with these peppers, most heavily concentrated in the placental tissue surrounding the seeds of the fruit. The level of pungency can vary significantly across different capsicum varieties, with C. chinense reigning supreme as the most incendiary. To quantify this spiciness, the Scoville Heat Unit (SHU) scale is employed, offering a metric that captures the concentration of capsaicinoids in a given sample, allowing enthusiasts and culinary experts alike to measure and compare the fiery heat of their favorite peppers.

Furthermore, polyphenols play a crucial role in promoting the expression of key antioxidant enzymes that bolster the body's defense mechanisms. Notable enzymes include catalase (CAT), which helps decompose hydrogen peroxide into water and oxygen; superoxide dismutase (SOD), which neutralizes superoxide radicals to mitigate oxidative stress; and glutathione peroxidase (GPX), which reduces lipid peroxides and hydrogen peroxide, thereby protecting cells from damage. (Kaulmann & Bohn, 2014; Mignet et. al., 2013).

8. Popular Varieties grown in Gujarat:

Farmers in Gujarat grow a mix of local desi and hybrid varieties, chosen based on desired pungency, yield, and resistance to pests/diseases. The major categories of varieties that rule Gujarat's fields are :

a) Gujarat Chilli-1 and Chilli-2 (developed and released by state agricultural universities) - known for high yield and moderate pungency.

b) Guntur Chilli – Grown for high pungency and export market.



- c) Byadgi Chilli Low pungency, deep red color; used in color extraction.
- d) Desi Varieties Often small. extremely spicy, popular in local consumption.

(A) Varieties released by Agricultural Universities:

Anand Agricultural University (AAU), located in the heart of Gujarat's agricultural region, plays a pivotal role in research, development, and dissemination of technology related to chilli cultivation in the state. The university's Department of Vegetable Science and its allied Krishi Vigyan Kendras (KVKs) have actively worked on improving chilli farming practices and varietal development. Varieties released by them is as shown in Table-1 :

Sr.	Variety Name	Year of	Special Features	
No.		Release		
1.	Gujarat Vegetable Chilli Hybrid- 2 (Anand Surya)	2024	Anand Surya is a hybrid characterized by medium anthocyanin coloration of nodes and presence of stem pubescence. The fruits have a light green color with medium sinuation of the pericarp, suitable for various culinary uses.	
2.	Gujarat Vegetable Non-Pungent Chilli-132 (Anand Saumya)	2024	The plant of this variety has strong intensity of anthocyanin colouration of nodes, absence of stem pubescence and dark intensity of leaf colour. Fruits have medium intensity of green colour with smooth texture, strong glossiness and non pungent taste at unripe stage.	
3.	Gujarat Anand Vegetable Chilli-113 (GAVC-113, Anand Jwala)	2023	This variety has a dense canopy with strong anthocyanin coloration on nodes and absence of stem pubescence. The light green fruits exhibit high pungency at the unripe stage, with strong sinuation of the pericarp and rough texture with medium glossiness.	

Table-1 : AAU Varieties

(Source : https://www.aau.in/crop-varieties?crop_group=4&crop=6742)



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4.	Gujarat Anand	2021	Anand Tej is known for its high	
	Vegetable		pungency and suitability for	
	Chilli-141		cultivation in Gujarat's agro-	
	(GAVC-141,		climatic conditions. The variety	N/DAVASDASSE
	Anand Tej)		has dense canopy of the plant. It	
			has weak intensity of	
			anthocyanin colouration at nodes	
			and medium intensity of stem	
			pubescence. The fruits have	
			medium intensity of green colour	
			at unripe stage.	
5.	Gujarat Anand	2011	GAVCH-1 is the first CMS-	ALC SE MALES
	Vegetable		based chilli hybrid in the state.	
	Chilli Hybrid-		The fruits are elongated straight	
	1 (GAVCH-1)		with a pointed blossom end,	
			semi-wrinkled surface, and light	
			green color, offering high yield	
			potential.	
6.	Gujarat Anand	2011	GAVC-112 produces pungent,	
	Vegetable		elongated straight fruits with a	
	Chilli-112		light green color and semi-	
	(GAVC-112)		wrinkled surface. This variety is	
			suitable for both fresh	
			consumption and processing.	
7.	Anand	2007	This variety is characterized by	
	Vegetable		its non-pungent taste at the	
	Non-Pungent		unripe stage. The fruits have a	
	Chilli-131		smooth texture, strong	
	(AVNPC-131)		glossiness, and medium green	
			color, making them suitable for	
			consumers seeking milder	
			flavors.	
8.	Gujarat	2003	The fruits of this variety are	
	Vegetable		green colour with elongated	North Andrews
	Chilli 111		straight shape, pointed blossom	
			end, slightly wrinkled fruit	
			surface with more luster.	



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9.	Gujarat Vegetable Chilli 121	2003	The fruits of this variety are dark green colour with good luster. Fruits are straight in shape with pointed blossom end and more pungent.	
10.	Gujarat Vegetable Chilli 101	2001	The fruits of this variety are green in colour with smooth surface having good luster. The fruits are straight in shape with pointed blossom end.	

Thus, Anand Agricultural University (AAU) aims to address the evolving needs of chilli farmers and the agro-industry by developing and releasing region-specific, improved chilli varieties with the key objectives of Enhancing yield potential, improving resistance to pests and diseases, quality enhancement in terms of various fruit traits and contents, climate adaptability as well as promoting sustainable agriculture.

(B) Guntur Chilli:

Guntur chilli originates from Guntur district in Andhra Pradesh, which is renowned for producing some of the hottest and most vibrant red chillies in India. Though native to Andhra, Guntur chilli varieties are also cultivated in Gujarat, particularly in areas with suitable irrigation and market access, due to their high yield and strong export demand. Farmers particularly in the Saurashtra and Banaskantha regions have adopted hybrid strains of Guntur chilli also due to suitability for processing and value addition (powder, flakes, oleoresin).

Popular Varieties of Guntur Chilli

1. Guntur Sannam (S4 type)

The word Guntur Sannam chilli (S4 type) has its origin in Telugu only confirms its Andhra Pradesh origin. The word Sannam stands for thin or long in Telugu. Sannam chilli belongs to the variety Capsicum annum. Guntur Sannam Chilli has been registered with the Geographical Indications (GI) registry of Government of India in 2009.



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Figure Source : https://guntur.ap.gov.in/odop/



(https://guntur.ap.gov.in/odop/). Guntur Sannam Chilli has got its own specific characteristics which have enabled it to earn international and national acclaim. Sannam chilli is generally known to trade as S4 type chilli and it is mainly used for its pungency and for the extraction and derivation of capsaicin. (https://www.gitagged.com/gi-tagged-guntur-sannam-chilli/)(spiceboard-GIguidelines circular). It is suitable for drying and export.

Key Characteristics:

- Color: Deep red to dark crimson when dried
- Pungency: High (varieties like Guntur Sannam have Scoville Heat Units between 30,000–50,000 SHU).
- Flavor: Sharp and spicy with a smoky undertone when dried.
- Texture: Thin-skinned and wrinkled when dried.
- 2. Teja Chilli

Teja chilli is a fine variety of Guntur chilli which is mostly produced in the southern states of India. Guntur Teja chilli is a popular, long, thin, and vibrant red variety of chilli pepper, known for its high heat level and fruity flavor. It's widely grown in Andhra Pradesh and Telangana states in India and often cultivated in regions such as Banaskantha, Sabarkantha, Surendranagar, and parts of Saurashtra in Gujarat. It is a popular choice for adding spice and depth to various dishes. The Teja variety is also exported to international markets.

Key Features:

• Teja chillies have a high Scoville Heat Unit (SHU) rating, typically around 50,000 to 100,000 SHU, making it one of the hottest varieties in the world.

• They are characterized by their long, slender shape, measuring around 5 to 10 centimeters in length.

- The chillies transition from green to a vibrant red hue as they ripen.
- Extremely pungent.



Uses

- Widely used in commercial chilli powder, spice mixes, and processed food products.
- Forms the base for many export-oriented spice products.
- Integral to Indian curries and traditional masalas due to its intense flavor and color.

(C) Byadgi Chilli :



Byadagi Chilli, also known as Bedgi Mirchi, is a famous variety originating from Byadgi town in Haveri district, Karnataka. The Byadagi Chilli has been Conferred with the Geographical Indication (GI) status by the Government of India in 2011 with GI Number 147. (<u>https://www.gitagged.com/product/byadagi-chilli-whole-</u>

<u>200gms/#:~:text=Byadagi%20Chilli%2C%20also%20known%20as,2011%20with%20GI%20Number%</u> <u>20147</u>.) Renowned for its deep red color and mild pungency, Byadgi chilli has found its way into other states like Gujarat, where it is cultivated for its market value in food processing and cosmetic industries. It is mainly grown in irrigated zones of North and Central Gujarat, where there is demand for processingfriendly chillies. Farmers prefer to grow it because of Good market price due to color content, high demand from spice industries and compatible with local agro-climatic conditions if managed well.

Key Characteristics

- Color: Bright, deep red (natural pigment).
- Pungency: Mild (Scoville Heat Units around 8,000–15,000 SHU).
- Flavor: Subtle and slightly sweet.
- Texture: Wrinkled skin, long and flexible pods.

Uses

- Color extraction: Used to produce oleoresins and natural food coloring (paprika).
- Processed products: Used in the production of chilli powder, sauces, and pickles.
- Cosmetic industry: Oleoresin used in lipsticks and balms due to its strong red pigment.
- Culinary use: Ideal for dishes requiring color but low heat.



(D) Desi Varieties:

In Gujarat, several **desi** (**traditional or indigenous**) varieties of chilli are grown, especially in local and regional farming systems. These varieties are often preferred for their unique flavor, adaptability to local climates, and cultural significance in Gujarati cuisine.

Common Desi Chilli Varieties Grown in Gujarat



1. Jwala Chilli

Jwala also known as Finger Hot Pepper is a popular, hot green chili variety native to India. The name Jwala means "flame" in Hindi, which is a hint to the chilli's spicy character. It features slender, finger-like fruits that taper to a pointed tip. It delivers a sharp, pungent taste with a characteristic aroma, making it ideal for spice blends and masalas.

Jwala is known for its high heat level, ranging from 30000 to 50000 SHU (Scoville Heat Unis – SHU), which puts it in the upper range of spiciness. It is widely grown in Saurashtra, Kheda, and Anand districts. It is suitable for fresh market use and is commonly used in daily cooking across Gujarat.



2. Bhavnagri Chilli

It is grown largely in Gujarat named after Bhavnagar district. It is a thick -fleshed, mildly pungent, long and broad fruits. The Scoville Heat Unit (SHU) of Bhavnagri chilli pepper is around 30,000-50,000 SHU. It is mainly used in pickles and especially popular for stuffing (bharwa mirchi).



3. Kathiawadi Chilli

It is grown in Kathiawar region of Amreli and Junagadh. They turn bright red when mature with moderate to high pungency. It is known for its adaptability to dryland farming. It is used in traditional Kathiawadi dishes and sun-dried for masalas.

4. Reshampatti Chilli:



Reshampatti Chili is akin to Cayenne Pepper, sourced mainly from Gujarat's Saurashtra region. Known for its mild spiciness and vibrant color, Reshampatti Chili Powder is essential in curries and widely used in everyday cooking, particularly for pickles, adding depth and color to dishes (https://mausamfoods.com/products/mausam-reshampatti-chilli-powder-

bag#:~:text=Reshampatti%20Chili%20is%20akin%20to%20Cayenne%20Pepper%2C,pickles%2C%20a dding%20depth%20and%20color%20to%20dishes.). Resham Patti is a high-yielding, medium pungency variety commonly cultivated in Gujarat. It has smooth skin and is widely used in powdered form.

The desi varieties often have lower yields than hybrids but are valued for their taste, pest resistance, and cultural significance. They are also key in sustainable and organic farming systems where chemical input is minimized. They perform well in low-input, rainfed conditions. They seem to be more aromatic and flavorful than hybrids. They are mostly consumed locally or sold in village markets.

6. Conclusion

The selection of Capsicum annuum cultivars in Gujarat is influenced by several factors including regional climate, water availability, disease prevalence, and market demand. Open-pollinated varieties like GLC-1 and GC-2 are cost-effective and preferred by small-scale farmers, while hybrids offer higher returns under intensive farming systems. Disease resistance, yield stability, and market preference are key criteria for adoption.

The diverse climatic zones of Gujarat allow for the successful cultivation of multiple Capsicum annuum varieties. With a growing focus on high-yielding, pest-resistant, and climate-resilient varieties, the chilli and bell pepper industry in Gujarat has great potential for both domestic supply and export. Promotion of improved varieties along with scientific agronomic practices can significantly enhance the productivity and profitability for farmers.

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