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DIVERSITY OF CAPSICUM IN GEGERUNG VILLAGE, WEST LOMBOK

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Abstract
Lombok is one of the islands in the Lesser Sunda Islands, home to a rich biodiversity, including plants. This research is necessary to determine the diversity of Capsicum plants in Gegerung Village. Research shows that two Capsicum species are present in Gegerung Village: Capsicum anuum and C. frutescens.
Keywords*: biodiversity, flora, village, West Lombok*

INTRODUCTION

Lombok is one of the islands in the Lesser Sunda Islands, home to a rich biodiversity (Rahayu et al., 2022; Rahayu et al., 2023, Rahayu et al., 2024; Rahayu et al., 2025), including plants. Gegerung is a village in Lingsar District, West Lombok Regency. The genus *Capsicum*, belonging to the Solanaceae family, is a group of plants of high economic and ecological value with a major center of diversity in tropical America. Morphologically, this genus is characterized by star-shaped flowers with white to purple corollas and berries containing the alkaloid capsaicin, which gives it a distinctive spicy sensation. This group includes dozens of wild species as well as five main species that have been widely domesticated worldwide to meet the needs of food, the pharmaceutical industry, and ornamental plants. Its wide adaptability to various climates and high genetic variation in fruit shape, size, and spiciness make *Capsicum* one of the most dynamic horticultural commodities in the global agricultural system.

To date, no research has focused on the diversity of *Capsicum* plants in Gegerung Village. Therefore, this research is necessary to determine the diversity of *Capsicum* plants in Gegerung Village. Research on *Capsicum* diversity in rural areas is strategically important for strengthening local food security and preserving germplasm. Mapping local chili varieties allows the identification of genotypes with natural resistance to pests, diseases, and specific climatic stresses in the region, which can be a key asset in sustainable plant breeding. Furthermore, documenting this diversity supports farmers' economic sovereignty through the development of superior regional commodities with unique market value. Ecologically, maintaining *Capsicum* genetic variability in rural lands serves as a protective barrier against genetic erosion, ensuring that the community's biological heritage and traditional knowledge in managing natural resources are preserved for future generations.

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METHOD

This research was conducted in Gegerung Village, Lingsar District, West Lombok Regency. The research used exploration and observation methods, followed by morphological identification and interviews with local residents. The results were analyzed descriptively.

RESULTS AND DISCUSSION

Research shows that two *Capsicum* species are present in Gegerung Village: *Capsicum anuum* and *C. frutescens*. *Capsicum annuum* and *Capsicum frutescens* differ fundamentally in their plant habit and flower growth patterns. *C. annuum*, which includes popular varieties such as large red chilies, paprika, and curly chilies, generally grows as an annual plant with flowers appearing singly at each stem node. In contrast, *C. frutescens*, best known as the cayenne pepper family, tends to be a peripheral or perennial plant with a woody stem texture. The main characteristic of this species is the appearance of flowers in clusters, where two or more flowers are often found growing from the same stem node.

Besides plant structure, significant differences are also seen in the position and characteristics of the fruit. *C. annuum* fruit typically grows pendulous and varies widely in size, from very small to very large, with relatively thick flesh. Meanwhile, *C. frutescens* fruit generally grows upright and tends to be small and slender. In terms of taste, *C. frutescens* consistently has a sharper and more pungent level of spiciness than most varieties in the *C. annuum* species, making it the main choice in making traditional chili sauce that requires high heat intensity.

Rural communities utilize *Capsicum annuum* multifunctionally, not only as a primary kitchen spice to enhance flavor and appetite through the production of chili sauce, but also as a crucial pillar of the household economy. In daily life, varieties such as large red chilies and curly chilies are often planted in yards or rice fields as cash crops that can be harvested periodically to meet urgent financial needs. Beyond consumption and economic aspects, some villagers still practice traditional uses, using parts of the fruit or leaves as external remedies to warm the body or relieve muscle pain. This intensive use reflects the strong interdependence between the availability of local biological resources and socio-economic stability and the fulfillment of community nutrition at the village level.

People widely use *Capsicum frutescens*, or better known as cayenne pepper, as a digestive stimulant and a key ingredient in various traditional food preparations due to its high level of spiciness. Besides its important role in culinary arts, providing a sharp, spicy flavor to chili sauce and coconut milk dishes, this species also has important value in herbal medicine thanks to its concentrated capsaicin content, which is often used to relieve cold symptoms, improve blood circulation, and as a natural analgesic. In rural areas, this plant is often found in yards as a self-sufficient food reserve that is resilient to weather changes, while also being a stable market commodity to support small-scale economies for local farmers and traders.

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CONCLUSION

Research shows that two *Capsicum* species are present in Gegerung Village: *Capsicum anuum* and *C. frutescens*. Differences in flower and fruit position—where *C. annuum* tends to be single and hanging, while *C. frutescens* is often found in groups and upright—are key parameters in identifying germplasm richness in the field. This research also confirms that the diversity of these two species plays a crucial role in supporting food security and the economy of communities, especially in rural areas.

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