



GN Turmeric 1: A new high yielding and rhizome rot resistant variety

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ABSTRACT

The varietal improvement program for Turmeric was successfully undertaken at Department of Agricultural Botany, N. M. College of Agriculture, NAU, Navsari. The available pure genetic stocks of turmeric were thoroughly screened for various yield contributing characters and other desirable traits including major disease. Based on the maturity group, yield potential and disease reaction the genotype NVST 37 was found most promising by maturity in 252-260 days, having broad erect leaves with dark green colour tall plants (Av. 130 cm) with 2-3 tillers, red orange core colour of rhizome powder, resistant to rhizome rot, having 83.90 % recovery on dry weight basis, recorded 33.60 t/ha rhizome yield exhibiting 21.49 % and 16.70 % increase over both the checks *i.e.* Sughandham and Kesar, respectively, containing higher curcumin (2.84 %) as well as higher oleoresin (8.68 %), fibreless rhizome and non lodging habit. The genotype NVST 37 was significantly superior to both the checks under study and is recommended for the commercial cultivation in the area of South Gujarat Heavy Rainfall Zone AES-III and middle Gujarat. The proposal for release as a variety with the name of "GN Turmeric 1" (Gujarat Navsari Turmeric 1) has been sent to SSSC, Gujarat state, Gandhinagar in the year of 2010-11.

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Spices, the products of plant origin used for seasoning food to add flavor and aroma. Spices also refer to the plant product, which enrich or alter the taste of the food generally giving pungency. Spices are invariably tropical in origin.

India, known as "Land of Spices" grows around 63 different types of spices and is the largest producer, consumer and exporter of spices in the world. India enjoys this monopoly in the international trade of spices since time immemorial. 90% of the world production of turmeric is from India. Spices add pungency and flavor to the Indian cuisine. (Salaria and Salaria, 2009)

Turmeric (*Curcuma longa* L.) is one of the most valuable and important spices all over the world, belongs to the family Zingiberaceae. India is the largest producer and exporter of turmeric in the world. Total production of spices is about 4.66 million tones from total area of about 2.65 million hectares. In India it is grown mainly in the states of Andhra Pradesh, Tamil Nadu, Uttar Pradesh, Bihar, Kerala, Orissa, Maharashtra and Gujarat. However, Andhra Pradesh and Tamil Nadu contribute nearly 50% of the production. Gujarat state produces around 5.99 lack tones of spices from 4.15 lakh hectares of area. Turmeric,

ginger and black pepper are the major spices of south Gujarat. Total production of turmeric in south Gujarat is about 14,500 tones from an area of about 1,000 hectares. However, there is a great potential to grow turmeric due to availability of perennial irrigation facilities and diverse soil conditions. Crop improvement studies undertaken at various research organizations (Chaturvedi *et al.*, 2010).

Turmeric has characteristic flavour and yellow colour. It is cultivated for its underground rhizomes which are used as spice, dye, drug, in cosmetic industry and in religious ceremonies. The turmeric rhizomes contain a variety of pigments in which 'curcumin' is the major pigment responsible for colour. Apart from curcumin and the volatile oil "turmerol" it also contains appreciable quantities of protein (6.3%), lipids (5.1%), carbohydrates (69.7%) and fibers (2.6%). (Mehta *et al.*, 2005).

Systematic efforts on introduction and evaluation of improved varieties of turmeric were not undertaken in the area of south Gujarat region. Majority of the area of south Gujarat has heavy black soil and receives heavy rainfall. The low productivity of turmeric in this area is because of non-availability of region specific variety, lack of better scientific package of practices and frequent