

ENVIRONMENTAL IMPACT ON FRUITING OF TOMATO PLANT: A REPORT BASED ON SOME CASE STUDIES

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Abstract

Impact of environment including soil conditions on fruiting of tomatoes are reported herein based on five case studies along with unusual length of more than 370 cm of a plant grown uncared in harsh environment. The study reveals that habitat, climate and environment play a significant role in flowering, fruiting, growth and survival of tomato plants.

Key words: Tomato plant, Environment impact, Growth and fruiting, Plant length

Tomato plant, *Solanum lycopersicum*, is usually an annual cultivated crop plant belonging to the Family Solanaceae; the determinate types of which are widely grown throughout the world in all climates (<https://en.wikipedia.org/wiki/Tomato>). The plant typically grows between 100 cm and 180 cm or more depending on the types of plant as well as climatic and cultivated conditions. Herein, five case studies are reported (Figs. 1-5); two of which are grown cared and three in uncared conditions. One is under cared flat-grown garden in Bangalore and the other in cultivated agricultural cropland field grown in West Bengal. All the three uncared cases are self-grown, apparently in harsh environmental conditions at Kolkata city suburban locations.



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Figs. 1 & 2. Tomato plants grown in cared conditions: In cultivated field of Hooghly district, West Bengal (Fig.1) and in the tub of veranda of Bangalore city, Karnataka (Fig.2).

Observations on growth, flowering, and fruiting of these tomato plants from different locations in India, a total of five case studies, are presented in Table 1 and Figs. 1-5.

Table 1. Comparable case studies on environment and growth of tomato plants as recorded in the first fortnight of February, 2021

Sl. No	Geographical location	Habitat/ Soil	Length (cm) and number of plants	Flowers/ Fruits*	Remarks / caring
1.	Hooghly district, West Bengal	Agri-field, loamy soil	150-200 (Many plants each with 5-9 branches)	High/ 30	Cultivated with care and support
2.	Bangalore city, Karnataka	Tub grown in open veranda	80 and 90 (Two plants, with 3-4 branches)	Medium/ 11 and 3	Grown with care and nourishment for more than one year
3.	Kolkata city suburb, West Bengal	Fallow land in between two buildings	100 (Single plant, with three branches)	Medium/ 8	Self-grown in alluvial soil with rubbish, uncared
4.	Kolkata city suburb, West Bengal	Ground floor wall crevice with little soil	370 (Single plant, with seven branches)	Medium/ 8	Self-grown in brick crack with sunlight and some moisture, uncared
5	Kolkata city suburb, West Bengal	Ground floor on sands	90 (Single plant, with two branches)	Low/ one fruit	Self-grown on sand, with sunlight, little moisture, uncared

Note: Asterisk indicates maximum number noted in a plant in February - March 2021.

The case studies under serial number: 1. Represents ideal cultivated loamy soil in cropland of winter season, 2. Red soil with regular watering, alive for more than one year, 3. Alluvial soil grown plant of winter season, 4. Little amount of sand and silt nearby hardly accessible, grown in winter with many bunches of flowers, and 5. In sand over cemented unused floor for keeping all sort of building materials, etc. These indicate that the case studies from West Bengal relate to seasonal and winter growing, while the Bangalore case study represents tomato plant of perennial nature, and also showed growth of somewhat dried plant from node regions. These may be due to somewhat suitable low cold condition in Bangalore city environment round the year. In West Bengal tomato plants are found dying due to hot summer condition, uprooted and/or unsuited for growth [1] uncared. It may be mentioned here that tomato plants (small and marble size Cherry tomato fruits, Fig. 6) were found growing in residential outdoor garden of Sherbrooke, Quebec, Canada only in their summer season (May- September) as the garden in the fall season was totally frosted.

Thus, it seems from these case studies that habitat, climate and/ or environment play a considerable role in flowering, fruiting, growth and survival of tomato plants [1,2] ; seeds try

to germinate even in unfavourable substratum/ soil and continue to grow and bear fruits for perpetuation of species [3].

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References

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5.



6.

Figs. 3-5. Tomato plants self-grown in uncared conditions of Kolkata city suburb areas in alluvial soil and building rubbish (Fig.3), alongside a grill in brick crack (Fig. 4) and in sands on cemented floor (Fig 5).

Fig. 6. Cherry tomatoes of Sherbrooke, Canada, from a household garden in September 2019.