

## Best Agronomic Practices of Tomato Cultivation

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### Introduction:

Tomato is the most important vegetable crop in India. Due to climate change, tomato growing farmers are facing some problems like drought and ground water depletion and labour scarcity. The wages for labours have also increased which leads to increase in cost of cultivation. Weeds are another major problem in tomato crop due to labour shortage and with increase in labour wages it is even more difficult to manage weeds in tomato crop. Now- a - days farmers are adopting plastic mulching in tomato. Plastic mulching reduces the evaporation losses and prevents the weed seed germination. By adopting technologies like drip fertigation, staking, timely plant protection measures, plastic mulching and best time of transplanting the yield and quality of tomato is increased.

### Study area:

I am Mude Ashok Naik, much interested in agriculture since from my childhood. I grew up with doing some farm operations in our own farm, because I was born in an traditional Agriculture family having agricultural farm with livestock unit. Study area is my own farm, located at Mothulakunta thanda, Tanakal mandal, Anantapur district, Andhra Pradesh. In this article I am going to share my own experiences in tomato farming by using various agronomic practices.

### Plastic mulching:

The mulch sheet I used in field is black & silver mulching sheet of 800 meters length and 1 meter width with a thickness of 30 microns. The cost of each roll is Rs. 2550. For one acre area two plastic mulching rolls are needed.

Broad beds are formed by tractor drawn raised bed former. The drip laterals are placed at the middle of the raised bed for supplying irrigation water to the crop by drip irrigation method.



**Plastic mulching sheet**



**Tractor drawn raised bed former along with basal dose fertilizer application**

On the raised bed the plastic sheet must be spread on top of the bed. Then, the plastic sheet is covered with soil on both sides to ensure that it is secure and not blown away by the wind followed by drilling holes on it to facilitate transplanting of tomato seedlings.



**Both sides of the plastic sheet covered with soil and circular holes formed for transplanting tomatto seedlings**



**Transplanting tomato seedlings**



**Advantages of plastic mulching:**

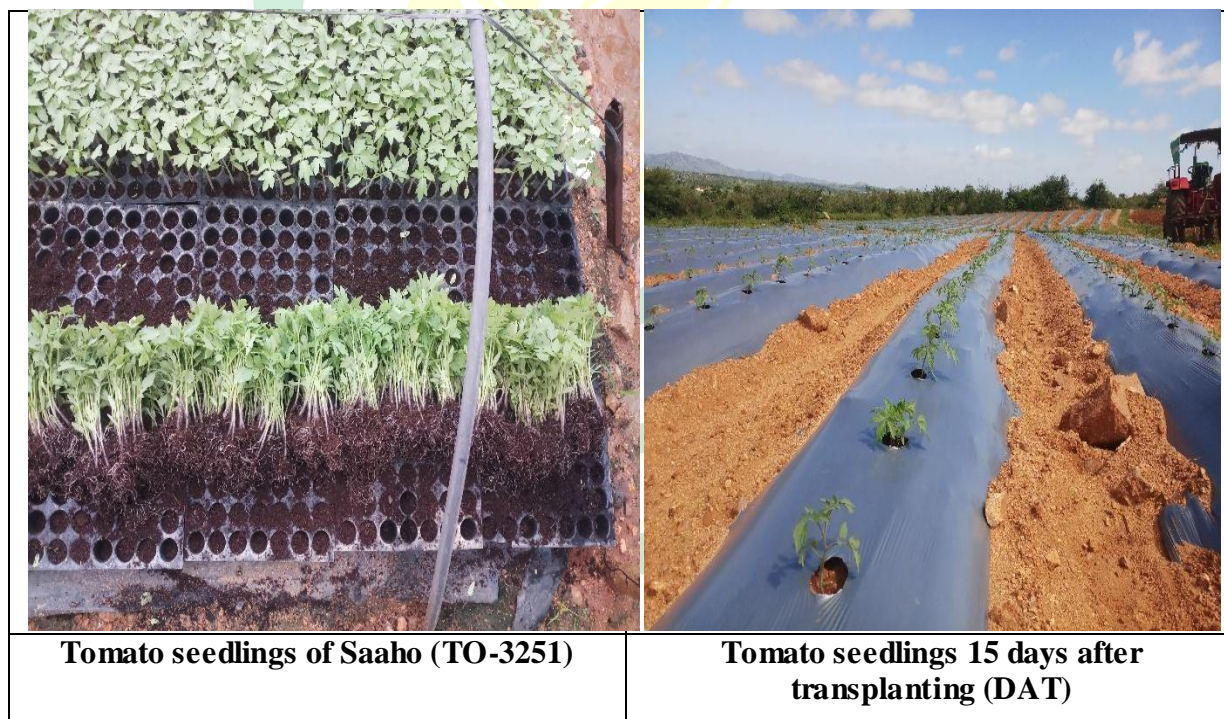
- Enhances crop growth
- Retain soil moisture
- Prevents soil erosion
- Maintains cool temperature during summer times
- Controls weed growth
- Reduces the incidence of pests and diseases

**Disadvantages of plastic mulching:**

- Plastic mulches degradation due to ultraviolet radiation
- We have to remove the plastic mulch carefully by the end of the season

**Selection of suitable hybrid:**

The tomato hybrid which I have used in my field is Saaho (TO-3251) having determinate type of growth habit. 25 days old seedlings were used for transplanting. The cost of each seedling is Rs. 1. Nearly 10000 -12000 seedlings are required for one acre land.

**Fertigation:**

Fertigation will be given once in a 3 days interval. Irrigation should be given 1 hour every day based on the requirement of the crop. Water requirement of tomato is 400-600 mm. The fertilizers used for tomato crop during transplanting to plant establishment stage are 19:19:19 (N:P:K) which is water soluble compound fertilizer because it supplies all three major nutrients (NPK), which enhances the vegetative growth. Flower initiation starts at 30 DAT and continuous up to 60 DAT. During this stage 12:61:0 (N: P: K) water soluble fertilizer was given. From flowering to fruit set, 13:0:45 (N: P: K) water soluble fertilizer was supplied. First picking will starts from 80-90 DAT and at this stage on every alternate day we have to supply multi K water soluble fertilizer. The quantity of fertilizer will be applied based on the soil test value.

### Staking:

Staking of tomato plants provides support to help them off the ground while assisting in their upward growth habit. Because many diseases and insects start at the ground level and using a structured system like staking will keep them away from ground contact. 15 labours are required for staking of 1 acre. The labour charge is Rs. 330/day/person. It is an expensive process but helps in increasing yield.



**Staking in tomato**



**Spraying in tomato**

### Sticky traps:

Yellow sticky traps helps in controlling and monitoring many pests including aphids, fruit flies, whiteflies and leaf minor adults etc. We will apply glue on both sides of the yellow



sticky traps. Thus, it helps in sticking the insects to the card so, that the insect population will be reduced.



**Yellow sticky traps in tomato**



**Fruit fly trap in tomato**

### **Pest and disease management**

*Tomato pinworm* may seriously damage to foliage and infest nearly 100% of the fruit. Larvae normally enter fruit through the calyx. Chloortraniprole 18.5% SC (Coragen) @ 0.3 ml/litre can be used successfully to kill the pinworms. Emamectin benzoate SC @ 0.5 g/l + Dichlorvos 76% EC @ 1 ml/l is effective for controlling fruit borers and *Helicoverpa*. Jassids can be controlled by Imidacloprid 17.8% SL @ 0.5 ml/l of water.

Early blight can be controlled by spraying Metalaxyl 8% + Mancozeb 63% WP @ 2g/l of water and late blight of tomato can be controlled by spraying cymoxanil (8%) + mancozeb (64%) WP fungicide (Curzate M8) @ 2g/l.

### **Picking:**

First picking starts from 80-90 DAT and tomato has a yield potential of 12-15 t/ha. The price varies from Rs. 10-26/kg depending on the market glut.



**Tomato picking****Grading in tomato****Transportation:**

Chinthamani tomato market, Karnataka is 60 km away from my farm. The transportation cost for 15 kg tomato box is Rs. 18/- and for unloading and grading of tomatoes Rs. 3/box is charged at the market.

**Marketing:**

I sold my tomato produce at Chinthamani tomato market, Karnataka. The commission is 10% for commission agents. The traders after purchasing tomatoes, they will transport them to the different states of India mostly to Tamil Nadu, Delhi, Maharashtra, Delhi, Rajasthan, West Bengal and Jammu & Kashmir etc.

**Chinthamani tomato market, Karnataka****Packing for transport to Delhi**



**Conclusion:**

By adopting agronomic practices like plastic mulching, drip fertigation, staking and timely plant protection measures the yield and quality of tomato is greatly improved. Based on my personal experience for catching best price we have to transplant tomato seedlings from second fortnight of April to first fortnight of June.

