

## **Title – Use of Polypropylene Non-Woven fabric row covers for improving fruit yield & reducing pest and disease risk in Watermelon.**

### **Introduction & situation Analysis**

Watermelon (*Citrullus lanatus*) is one of the important vegetable crops commercially grown in Maharashtra also in Pune district. India is the second largest producer of Vegetables in the world, next only to China.

Baramati is drought prone area, where the average rainfall received is about 750-800 mm. As there are water scarcity and sucking pest infestation problems, most of the farmers uses the drip irrigation systems to irrigation & Fertilizers application to crops. Also for controlling the attack of sucking pest on watermelon and reducing the cost of insecticides to control them this trial was carried out at Village- Varwand & Patas Tal- Daund Dist-Pune.

Polypropylene Non-woven Fabrics ( Plant Crop cover) made from polypropylene an economical and environment friendly polymer by spinning the material into fine filaments and bonding them by heat without use of any binders. It has specialized UV absorbent incorporated in it which ensures protection against the sun's rays.

Non-woven Fabrics ( protection paper) create a micro-climate providing uniform ventilation thereby encouraging early growth and development of the plant and/or crop with the valuable end result of both improvement in quality and yield. They protects the plant from cold and frost. Up-to 5 degrees C some circulating moisture is trapped by it and in the event of a frost this film freezes providing the plant with natural frost protection. It minimizes the dangers caused by hail, heavy rains and storms. This Non-woven Agricultural Fabrics is almost 80% transparent and water permeable.

### **Plan, Implement and Support from the farmer**

The trial on Effect of Poly Propylene Non-woven fabric for improving fruit quality reducing Pest risk in Watermelon was conducted during 2019-2020 summer season. The trials were conducted in summer on irrigated medium black soil. The annual rainfall is 894.4 mm with 48 rainy days. Before this trials farmer was planted Watermelon on Mulching paper but they do not use Poly propylene- Non Woven crop cover because of this farmers practice there is attack of pest and disease on crops and requires maximum cost for control of sucking pest. So avoiding this problem of farmer KVK was decided to conduct trial on Use of Poly Propylene Non-woven crop covers for improving fruit quality & reducing Pest risk in Watermelon.

### **Output & Outcome**

Comparisons were made with farmers practice. From the above trial it can be concluded that, Due to use of PP non woven Crop cover in Watermelon after 8-10 days of plantation increases the fruit yield and reduces pest risk of watermelon only 2% pest incidence is observed. Also the crop duration is reduced by 15 days due to this received maximum market price to crops as compare to farmer practice. Planting of Watermelon on Mulching in summer season reduces crop water requirement and also weed population.

It was observed that the yield of watermelon was increased by 25.64 % as compared to farmers practice with the good quality fruit production. The average yield obtained in trial plot was 490 q/ha as compared to 390 q/ha from farmers practice. 6 Chemical sprays were required less to control the sucking pest as compared to farmer practice. The net returns (Rs.2,43,688/-

per ha) and B: C (1:2) ratio were also recorded highest in treatment plots as compared to local check net returns (Rs.1,19,800/- per ha) and B: C (1: 1.6) ratio.

**Table no.1 Details of observations recorded in the on farm trial**

Title of Trial (OFT)	Treatment Details	Data on the Parameters
1	2	3
Effect of Poly Propylene Non-woven crop covers for improving fruit quality & reducing Pest risk in Watermelon.	<b>T1- Farmers Practice-</b> Planting on 30 microns silver black polyethylene mulching without use of PP Nonwoven crop covers.	1.Number of Sprays required - <b>10</b> 2. % attack of pest & disease- <b>38.18</b> 3.Additional Cost required – <b>Rs.0.00/-</b> 4. Yield obtained (Tones /ha)- <b>390 q / ha.</b> 5.Net Returns (Rs /ha)- <b>Rs.1,19,800 /-</b> 6.C :B Ratio - <b>1 : 1.6</b>
	<b>T2-Trial Treatment-</b> Planting on 30 microns silver black polyethylene mulching with use of PP Nonwoven crop covers	1.Number of Sprays required - <b>04</b> 2. % attack of pest & disease- <b>11</b> 3.Additional Cost required – <b>Rs.13871/-</b> 4. Yield obtained (Tones /ha)- <b>490 q / ha.</b> 5.Net Returns (Rs /ha)- <b>Rs.2,43,688/-</b> 6.C :B Ratio - <b>1 :2</b>

**Impact**

The effect of Poly Propylene Non-woven crop covers is useful for improving fruit quality & reducing Pest risk in Watermelon this technology is very useful to reducing pest risk at very minimum level and for improving fruit quality and receiving maximum net returns to the farmers.

By observing the result of this technology now days approx.1415 farmers of Watermelon, Muskmelon and in other dwarf types of vegetables with covering a total area 464 ha in four tahasils i.e.Baramati, Purandar, Daund, Indapur of Pune districts.



**Training, OFT, FLD, Method demonstration on use PP- Non woven cover in Watermelon crop to reducing pest attack and for increasing quality of fruit.**

