

Intensive Plantation of Tomatoes and Calculation of the Water Required Using Dripping Method of Irrigation

Ismaeel Baradaran Hosseini

Dehbagh Agricultural Comple, No.85, Khayyam 11, Khayyam Boulivard, Mashhad

In this method, 100000 plants of tomatoes are planted in an acre. The distance between the rows is 2 meters. Plants are planted on both sides of the row. Five pairs of plants are planted in every meter and the distance between each plant is 20 cm. Thus there will be 20 plants in every meter, and 2000 plants in a row, which is 100 meters long with a distacce of 2 meters from other rows. The number of plants in 50 rows will be 100000. Irrigation is carried out by dripping method. In every acre, 5000 meters of 16 mm pipes are used, with two drippers in every meter. 10000 drippers supplying 4 liters of water per hour=40000 liters of water per hour× 5.5 (irrigation time in every shift). 7 shifts, each shift seven days after the previous one, followed by 18 shifts, each shift five days after the previous one, followed by seven shifts, each shifts seven days after the previous one, Thus:

32 shifts×220000 liters of water=7040000 liters for a period of 180 days.

180 days×24 hours×3600=15552000

7040000 litrs of water:15552000=452 (the water needed for every acre is thus less than half a liter per second). The output in every acre is more than 100000 kilos.

In the traditional method, the maximum output of 25000 plants is 40000 kilos, with the water used being 1.5 liter per second. In the mechanized method of planting in rows, the maximum output of 50 bushes is 60000 kilos, with the water used being 1.2 liters per second. It is to be noted that the average output of tomatoes in Khorassan is 33 tons per acre.