# TOMATO FERTIGATION

## GENERAL

Under suitable conditions, high yielding tomato varieties are expected to produce 80-100 tons per ha. Tomato plants are non-terminating: additional growth continues in parallel to fruit ripening on older plant parts. Fertigation should, therefore, support continued growth while simultaneously ensuring good ripening of high-market value fruits. Nitrogen supply must be sufficient as long as growth continues. Increased phosphorous and potassium levels assure attainment of high quality (taste, colour, firmness and shelf-life). A well-balanced plant nutrition program is the key to success, especially at the end of the season, when no further growth is expected. It is important to avoid any excess of nitrogen, which may harm fruit quality and delay ripening. The maintenance of potassium level through fertigation is essential to fruit-setting and fruit-enlargement.
It is necessary to avoid any excess of NO3- during the first stage, which, combined with magnesium deficiency, depresses the fruit-setting. Deficiency in calcium induces black bottom disease. We have to assure the concentration in ammonium (NH4+) during this stage.
The optimal pH varies from 6.5 to 7, conductivity between 2 and 3 mmoh/cm, as well. Tomato is slightly sensitive to salinity, but well to zinc, iron, boron and manganese deficiencies. Sulphur fertilisation and increasing E.C value improves firmness and coloration of the fruit.

## NUTRIENT REMOVAL
### Fruits + Leaves

| | N | $P_2O_5$ | $K_2O$ | CaO | MgO |
|---|---|---|---|---|---|
| Under greenhouse (150 T fruits/ha) | 400 | 136 | 928 | 381 | 118 |
| Open-fields (60 T + 21 T leaves) | 136 | 54.8 | 232 | 339 | 36 |

*(Source: CTIFL, France)*

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# FERTIGATION ADVICE

Expected yield:

150 T/ha – fertilisation advice: N: 440 kg/ha – $P_2O_5$: 250 kg/ha – $K_2O$: 830 kg/ha

| Irrigation | Phenologic stage | From planting to first fruit setting (F5) | | | From first fruit setting (F6) to first picking (R2) | | | During picking (R2) till 15 days before the end | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number of days | 28 | | | 60 | | | 75 | | |
| | Fertilising elements | N | $P_2O_5$ | $K_2O$ | N | $P_2O_5$ | $K_2O$ | N | $P_2O_5$ | $K_2O$ |
| | Requirements in fertilising elements | 60 | 30 | 60 | 200 | 100 | 200 | 180 | 120 | 570 |
| | NPK ratio | 2 | 1 | 2 | 1.9 | 1 | 3.2 | 1 | 0.7 | 3.1 |
| | Formulation | 20*5*30 + TE | | | 20*10*20+2 MgO | | | 12*08*38 + TE | | |
| | Number of kg/ha | 300 | | | 1000 | | | 1500 | | |
| | Number of kg/ha/day | 10.7 | | | 16.6 | | | 20 | | |

| Foliar treatment | Phenologic stage | Formulation | Dosages |
|---|---|---|---|
| | 15/20 cm | SUPREMO L 259 P +Mg+Mn+N | 5 l/ha |
| | 30/40 cm | SUPREMO L 259 P +Mg+Mn+N | 5 l/ha |
| | before each flowering | SUPREMO L NPK 8/8/6 +TE | 5 l/ha |
| | From first fruit setting (F6) to first picking (R2) | SUPREMO L 135 Mg +N | 3 x 5 L; in case of necessity |
| | During picking (R2) till 15 days before the end | SUPREMO L 225 Ca +N+TE | 5 x 5 L ; at 10 days interval |

Yield deviation: By 10 T/ha of deviation, fertilisation advice will be reduced or added of 50 kg/ha of 20*10*20 + 2 MgO + T.E, at stage 2 and 100 kg of 12*8*38 + T.E, at stage 3.

Notice: Formulae and recommended doses correspond to the plant average needs, cropped on well-balanced soils. They must be adapted to the soil, the climate, the cropping conditions, the variety, the water management and the yield target. Fertigation schedule indicate daily fertilizer requirements per ha. In case of irrigation in time intervals other than daily, the amount of fertilizer to be given has to be increased proportionally. The base dressing (organic and/or mineral) should be deducted from advised recommendations.

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