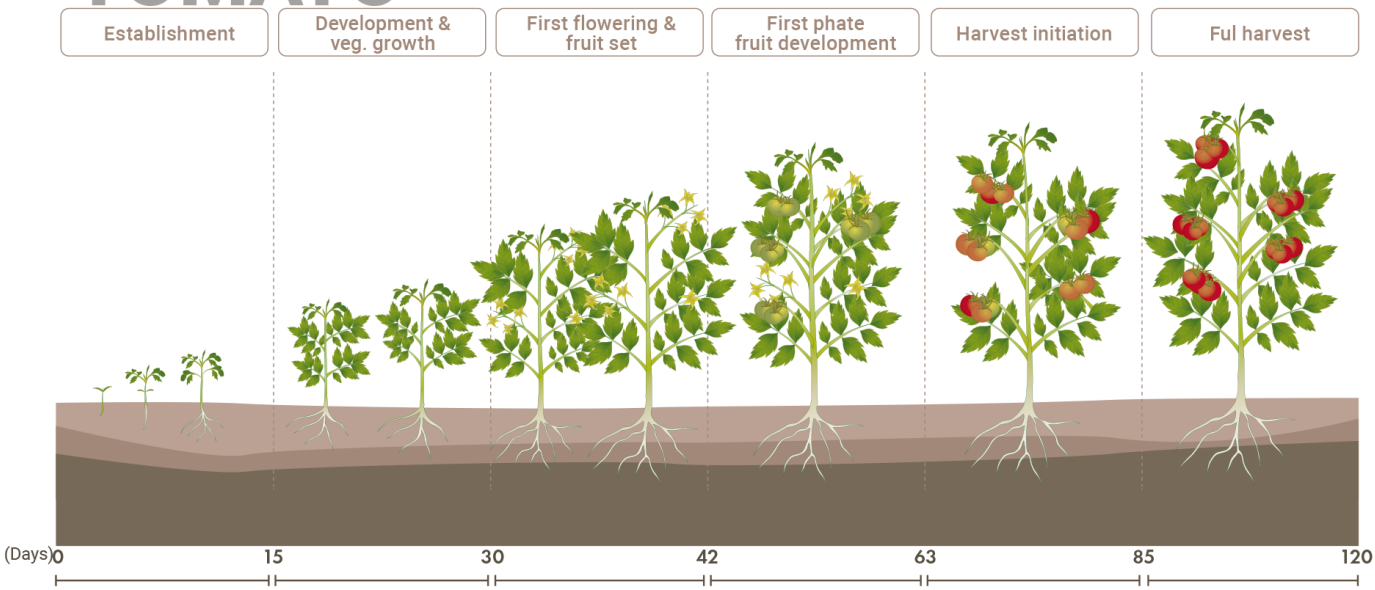
Tomato phenological phases and their nutrition requirements

The following plan is suggested to achieve the mentioned requirements, for a determinate cultivar of field tomatoes with a life span of 140 days, and an expected yield of 100 MT/ha, by fertigation via drip irrigation. Potassium nitrate should be used as the primary source of potassium, and a partial source of nitrogen. The balance of nitrogen should be sourced from calcium nitrate, magnesium nitrate and ammonium nitrate, as per the following phase-specific rates.

Growth stage (DAT)	Potassium nitrate	Balance of N	P_2O_5	CaO	MgO	S
	kg/ha					
0-28	130	30	34	30	25	19
29-63	402	58	33	60	40	30
64-110	391	43	33	53	35	26
111-140	163	4	0	8	0	0
Total	**1086**	**135**	**100**	**151**	**100**	**75**

Growth stage (DAT)	$N:P_2O_5:K_2O:CaO:MgO:S$				Reasoning
0-28	N K_2O MgO	1 1,28 0,53	P_2O_5 CaO S	0,72 0,64 0,4	Relatively high N, P, K for establishing root system and building shoot biomass.
29-63	N K_2O MgO	1 1,7 0,36	P_2O_5 CaO S	0,3 0,55 0,27	Lower P beacuse root system is already established; some reduction in K; continuous demand for Ca and Mg for vegetative organs.
64-110	N K_2O MgO	1 1,91 0,37	P_2O_5 CaO S	0,35 0,56 0,28	Stable P requirement, now for seed production; very high K requirement for bulking up of the developing fruits; stable demand for Ca, Mg and S, for vegetative organs.
111-140	N K_2O MgO	1 3 0	P_2O_5 CaO S	0 0,32 0	Markedly reduced requirement for all nutrients, except K, which is required for bulking up of the developing fruits.

TOMATO


Establishment
Development & veg. growth
First flowering & fruit set
First phate fruit development
Harvest initiation
Ful harvest
(Days)
0
15
30
42
63
85
120