

Processing Tomato

Sampling & Growth Stages

Timing: Begin sampling at stage 2 (vegetative) and monitor every 10-14 days until stage 6.1 (maturity).

Sample volume: 20-30 petioles and or young fruit

Sampling Petioles: Collect 1 composite leaf per plant, select the youngest fully expanded leaf (YFEL), usually the fourth leaf from the top, from actively growing plants. Discard the leaflets and retain the centre petioles for analysis.

Sampling Fruit: Collect young fruit from the apex of the inflorescence (first maturing fruit) commencing with the first or second inflorescence and continuing as required. Send whole fruit. If mature or large fruit is sampled, fruit quarters may be frozen ASAP, then send well insulated to reduce volume. Always use leak proof containers for fruit samples.

Sample from a representative area in the crop and return to the same area for subsequent samples.

Primary Stage	Secondary Stages	Description	Comments
1		Seedling	Not branched
2		Vegetative growth	Branched plant – no flowers
3		Flowering stages	
	3.1	<i>Flowering (open scale, depending on number of inflorescences, it may go to 3.7 = 7 inflorescences)</i>	1 st inflorescence developed (flower cluster closest to soil surface per stem)
	3.2		2 nd inflorescence developed per stem
	3.3		3 rd inflorescence developed per stem
4		Fruit development stages – fruit set and fruit growth/expansion (green fruit)	
	4.1	<i>Fruit development (open scale depending on the number of inflorescences that have set fruit, tomatoes will still bear flowers, stage 4 is finished when a fruit on the 1st inflorescence has developed 'breaker' colour)</i>	1 st inflorescence has set fruit with at least two fruit > 1cm in diameter (measured around the 'equator')
	4.2		2 nd inflorescence has set fruit with at least two fruit > 1cm in diameter
	4.3		3 rd inflorescence has set fruit with at least two fruit > 1cm in diameter
5		Early fruit ripening stages – breaker (coloured/orange fruit)	
	5.1	<i>Early fruit ripening (open scale depending on the number of inflorescences that have developed 'breaker' colour, tomatoes may still bear flowers, stage 5 is finished, when a fruit on first inflorescence has turned fully red)</i>	One or more fruit on 1 st inflorescence have developed breaker colour (record % of fruit coloured on 1 st inflorescence)
	5.2		One or more fruit on 2 nd inflorescence have developed breaker colour (record % of fruit coloured on 2 nd inflorescence)
	5.3		One or more fruit on 3 rd inflorescence have developed breaker colour (record % of fruit coloured on 3 rd inflorescence)
6		Fruit ripening stages – maturity (red fruit)	
	6.1	<i>Mid fruit ripening (open scale depending on the number of inflorescences that have developed fully red coloured fruit, stage 6 is finished, when 80% of fruit on all inflorescence per stem turned fully red)</i>	One or more fruit on 1 st inflorescence have developed fully red colour (record % of fruit red on 1 st inflorescence)
	6.2		One or more fruit on 2 nd inflorescence have developed fully red colour (record % of fruit red on 2 nd inflorescence)
	6.3		One or more fruit on 3 rd inflorescence have developed fully red colour (record % of fruit red on 3 rd inflorescence)
7		Harvest	At least 80% of fruit on all inflorescence per stem turned fully red