

Rice Sampling & Growth Stages

Timing: Sample 7-10 days prior to intended fertiliser applications, e.g. at tillering (21-29), stem elongation (30-34), and/or booting stages (37-49)

Sample volume: 50 –100 plants, with roots removed

Sampling: Select whole plants from a 1-2 ha representative area of the crop. Retain the entire top of the plant before tillering, or 10cm of the basal plant part; remove all roots prior to postage to avoid soil contaminating the sample. Return to the same area for subsequent samples.

Primary Stage	Growth Stage	Description	Comments
1			<i>Leaf development</i>
	1	Number of leaves visible	Imperfect leaf unrolled, tip of first true leaf visible
	1.1		First leaf unfolded
	1.2		2 leaves unfolded
	1.3		3 leaves unfolded
			4 leaf stage
	1.9		9 or more leaves unfolded
2			<i>Tillering</i>
	2.3	"Shoots" appear	3 tillers detectable
			Stages continuous until ...
	2.9		Maximum number of tillers detectable
3			<i>Stem elongation</i>
	3.4	Culm carrying panicle (not visible) begins to elongate and extend	Panicle initiation - panicle detected as a bulge in the upper leaf sheath
	3.7		Flag leaf just visible, still rolled, panicle moving upward
	3.9		Flag leaf stage: flag leaf unfolded, collar regions (auricle and ligule) of flag leaf and penultimate leaf aligned (pre-boot stage)
4			<i>Booting</i>
	4.7	Panicle ready to emerge from flag leaf	Flag leaf sheath opening
5			<i>Heading</i>
	4.8	Complete emergence of Panicle with spikelets	Beginning of panicle emergence: tip of inflorescence emerged from sheath
6			<i>Flowering</i>
	6.5		Full flowering: anthers visible on most spikelets

Growth Stage numbering system is in accordance to the extended BBCH, a uniform coding of phenologically similar growth stages for all plant species

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7			<i>Milk stage</i>
	7.1	Start of development of grain	Watery ripe: first grains have reached half their final size
	7.5		Medium milk: grain content milky
8			<i>Dough stage</i>
	8.3	Beginning of grain maturation	The grains in the panicle begin to change from green to yellow
	8.7		Senescence of tillers and leaves is noticeable
			The field starts to look yellowish
9			<i>Mature grain</i>
	9.2	End of life cycle	Ninety to one hundred percent of the filled grains have turned yellow and hard
	9.7		The upper leaves are now drying rapidly although the leaves of some varieties remain green

Additional references to those in the footer:

2000, Kealey L M & Clampett W S (Eds), Production of Quality Rice in South Eastern Australia, Rural Industries Research & Development Corporation, ISBN 0-642-58032-4, Chapter 3 The Plant Pp: 6-11 & Chapter 7 Crop Establishment & Management Pp: 6-13

2010 (February), Web [www.knowledgebank.irri.org/growthstages/growthstages.htm]

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