

Rice Morphology



www.rkbassam.in

Introduction

Rice is a highly diverse crop. Each variety has unique features, and varieties can be differentiated from each other by their morphological and growth characteristics. It is important to understand the different plant structures and growth stages of the rice variety being grown, as this will influence the time of planting and harvesting along with the schedule and amount of many of the management inputs.

Morphology

Rice morphology refers to the study and identification of plant features and structure as it develops during the vegetative and reproductive growth stages.

Growth stages of a rice plant

The growth of a rice plant can be divided into three phases and further divided into 10 distinct stages. The three phases are vegetative, reproductive, and ripening.

Vegetative

This phase begins after the seed imbibes sufficient water to start germination and ends with the tillering stage process. The length of the vegetative stage is dependent on the variety and photoperiod sensitivity of plant. There are four stages in this phase: germination to emergence; seedling; tillering; and stem elongation.

Reproductive

This phase begins around the period of highest tillering activity, when the panicle primordia initiate in the culm, and ends after the flowering and pollination are completed. This phase lasts approximately 35 days and contains 3 stages: panicle initiation to booting; heading; flowering.

Ripening

The final stage is about 30 days while the grain is developing and maturing. The three stages in this phase are milky grain; dough grain; and mature grain.

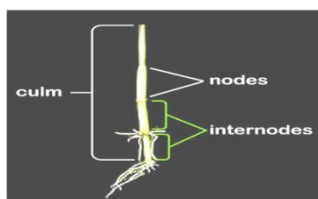


Fig. 5

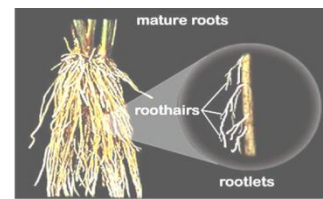


Fig. 6

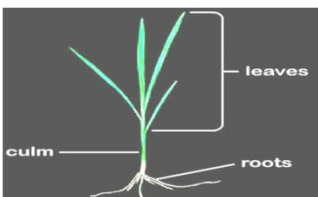


Fig. 7

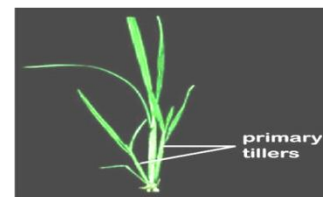


Fig. 8



Fig. 9

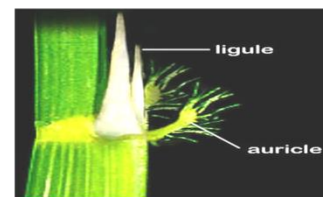


Fig. 10

#	Growth stages	Description
0	Germination to Emergence	Radicle and plumule emerge
1	Seedling	Seminal roots and up to 5 leaves
2	Tillering	From 1 st tiller to maximum tiller
3	Stem elongation	Closely related to varietal duration
4	Panicle initiation to booting	Development of the panicle in the culm
5	Heading	Panicle comes out of the culm
6	Flowering	Anthers protrude and fertilization takes place
7	Milky grain	Grains fill with a milky liquid
8	Dough grain	Milky liquid begins to harden; senescence begins
9	Mature grain	Grains are fully developed; yellow



Assam Agribusiness and Rural Transformation Project (APART)

The World Bank is the funding agency of APART. Department of Agriculture, Assam is the nodal department for implementation of APART. ARIAS Society is the State Level coordinating and monitoring agency for APART. Assam Agricultural University is the leading Agricultural University of the State and implementing agency of APART, imparting research and scientific support. International Rice Research Institute (IRRI) is the rice global leader providing technical and hand-holding support in the implementation of APART.