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RICE

Scientific name – *Oryza sativa*

Family – Poaceae

Vernacular name - Dhan



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According to D. Chatterjee (1948), there are altogether 24 species of genus *Oryza* of which 21 are wild and two viz., *Oryza sativa* and *Oryza glaberrima* are cultivated. *Oryza sativa* is grown in all rice growing areas, but *Oryza glaberrima* is confined to the West Africa only. Thus it indicates that there might have been two centres of origin of our cultivation – SE Asia and W Africa



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ORIGIN

- Rice is originated in China, dating back to 2600 BC.
- In India rice was first discovered in Lothal (Gujrat).
- It is cultivated in almost all Asian countries including India, Burma, China, Indonesia and Thailand.
- It is extensively grown as food crop, occupying 43.77 mha.



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Morphological Characteristics

- Rice is an annual herb with jointed stem called as 'culm' which is about 50-150 cm high.
- The internodes are short, in basal region and they are long and hollow in upward region.
- The 'culms' are fully or partially covered with leaf sheath.



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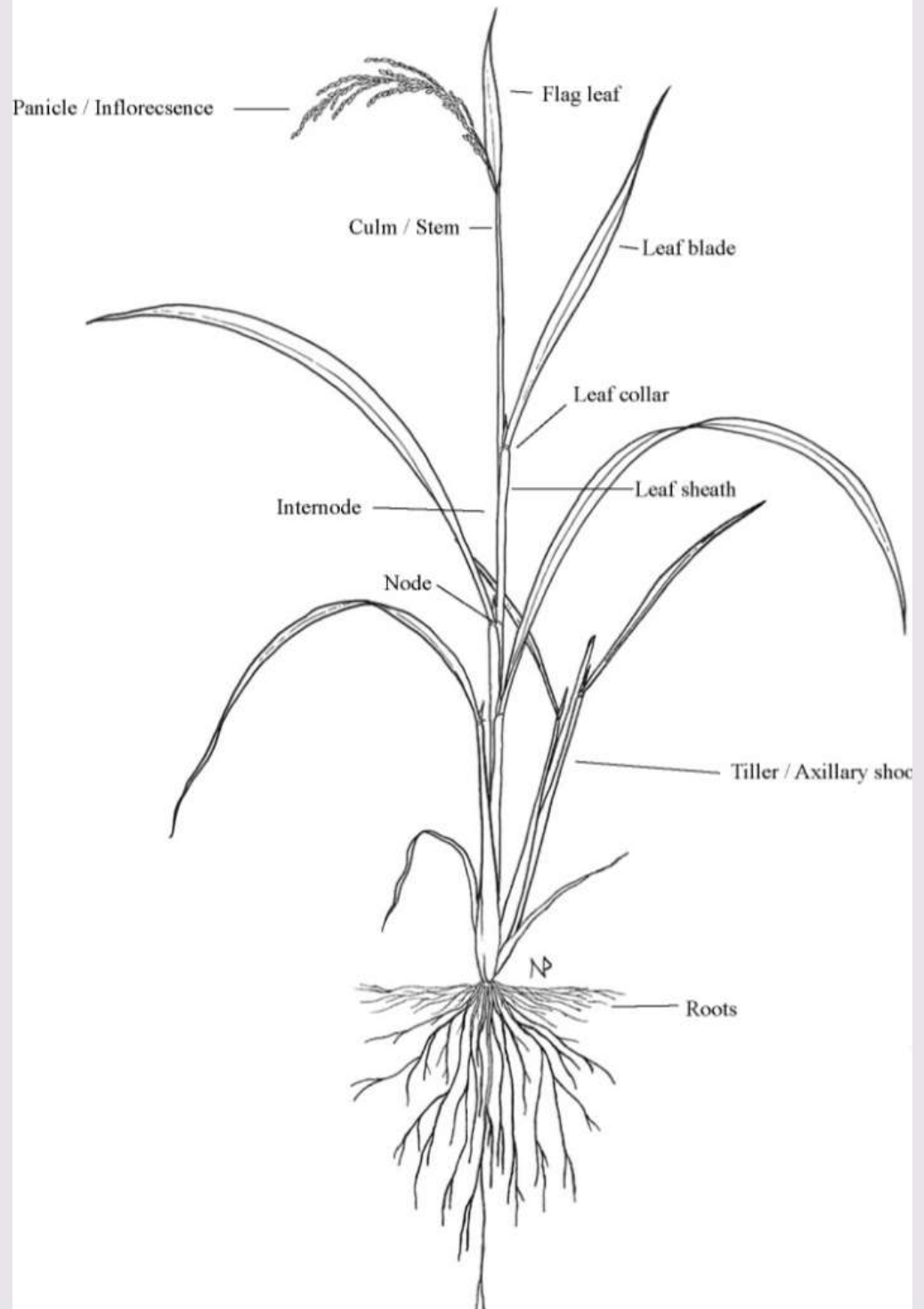
- Leaves are broad and alternate in position, which are present singly at each node.
- At the leaf base, a ligule is present which is sickle shaped.
- The flowers are arranged in terminal panicles.

Oryza sativa Plant
Cultivar Nipponbare



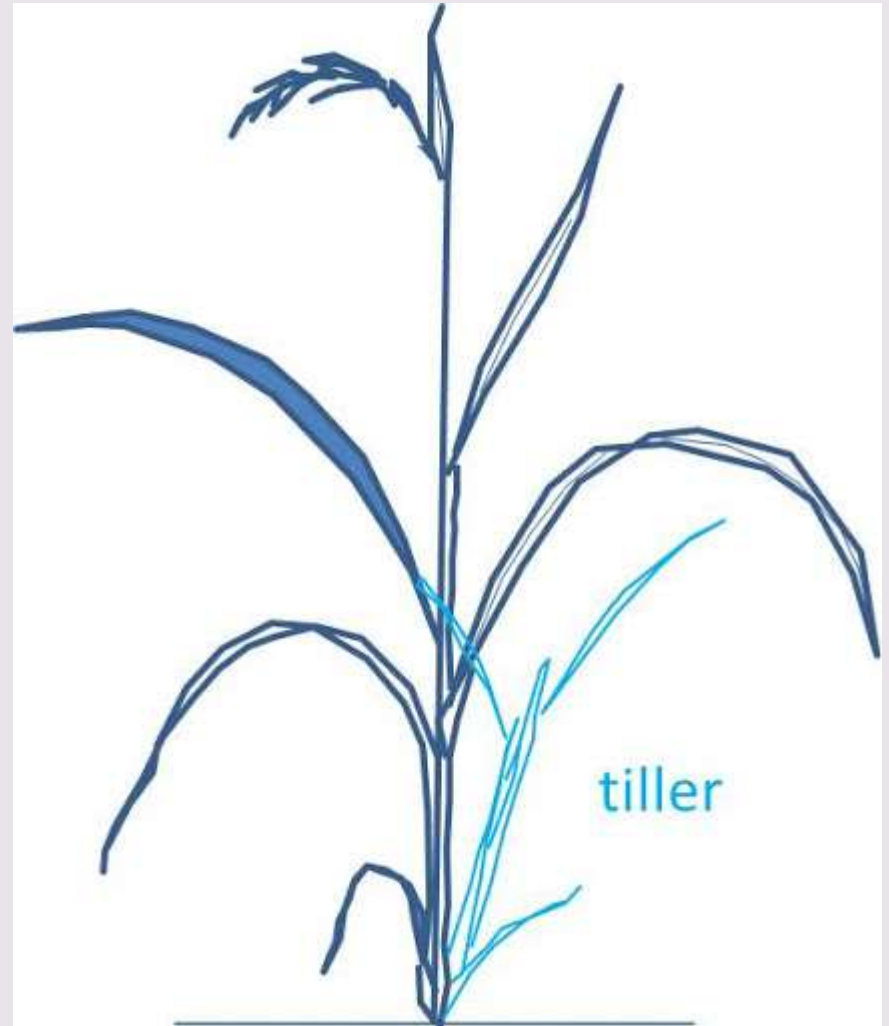
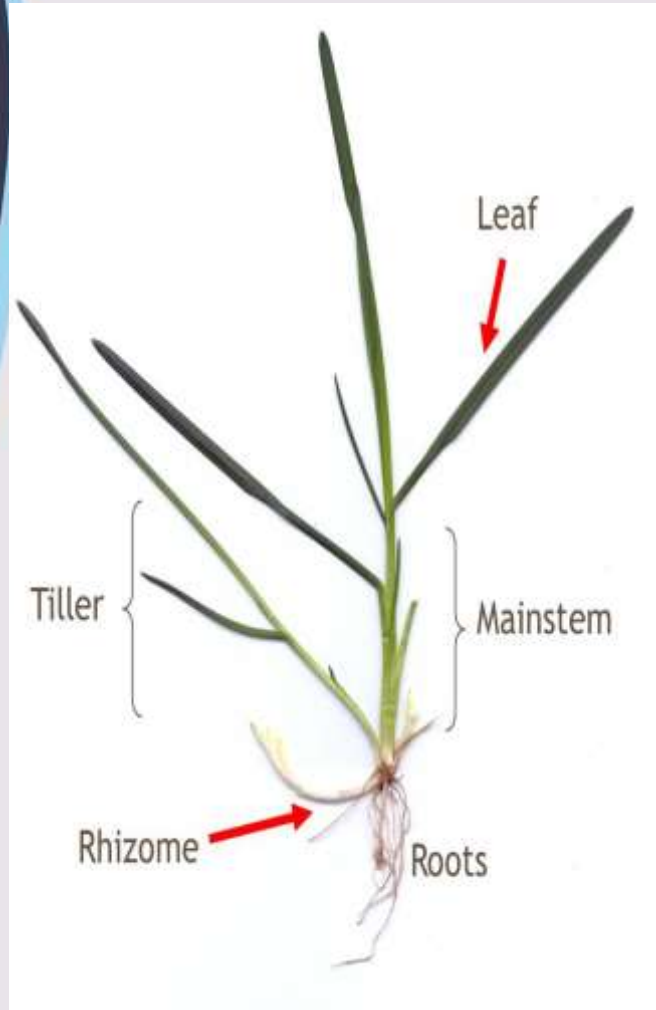
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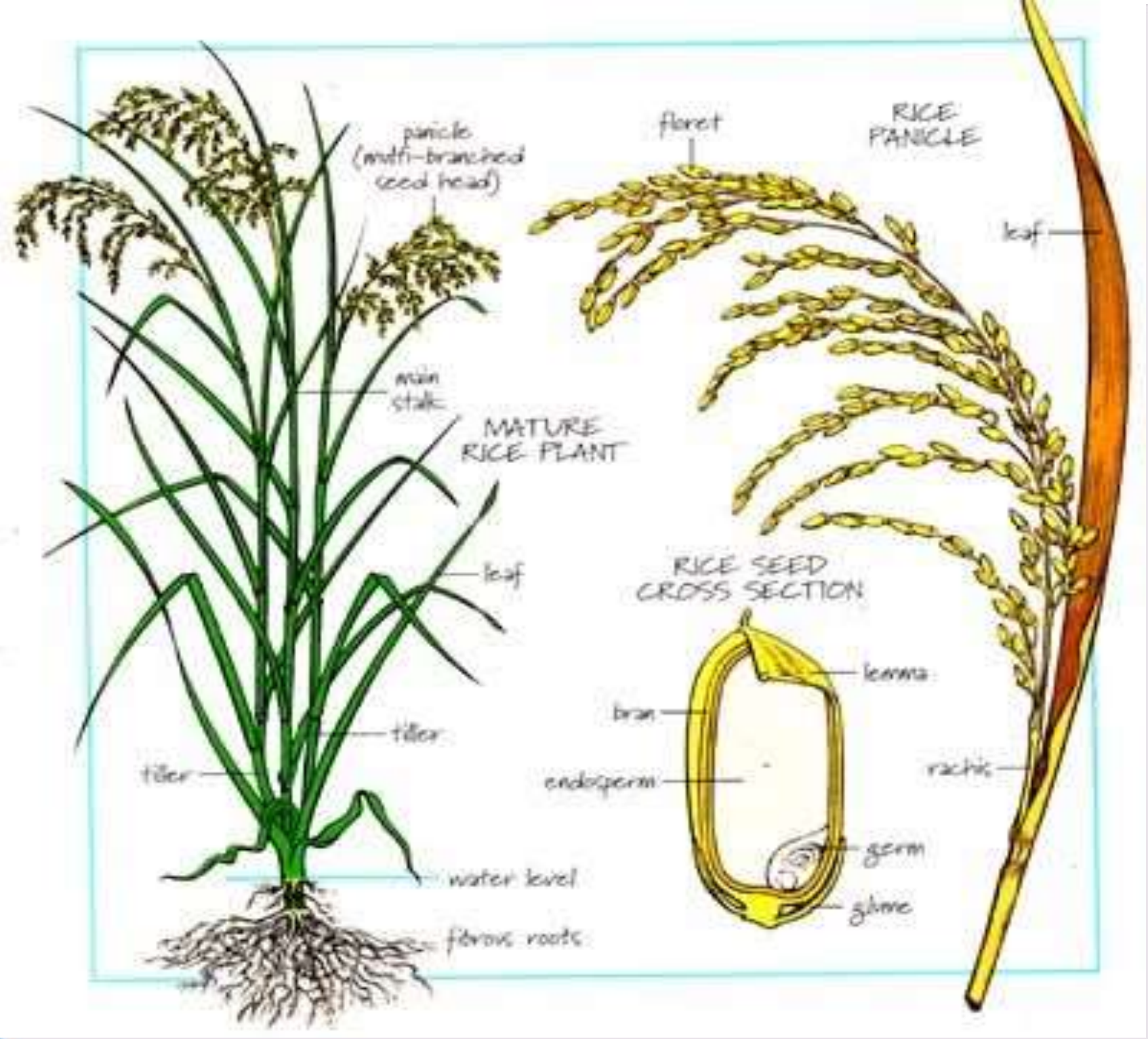


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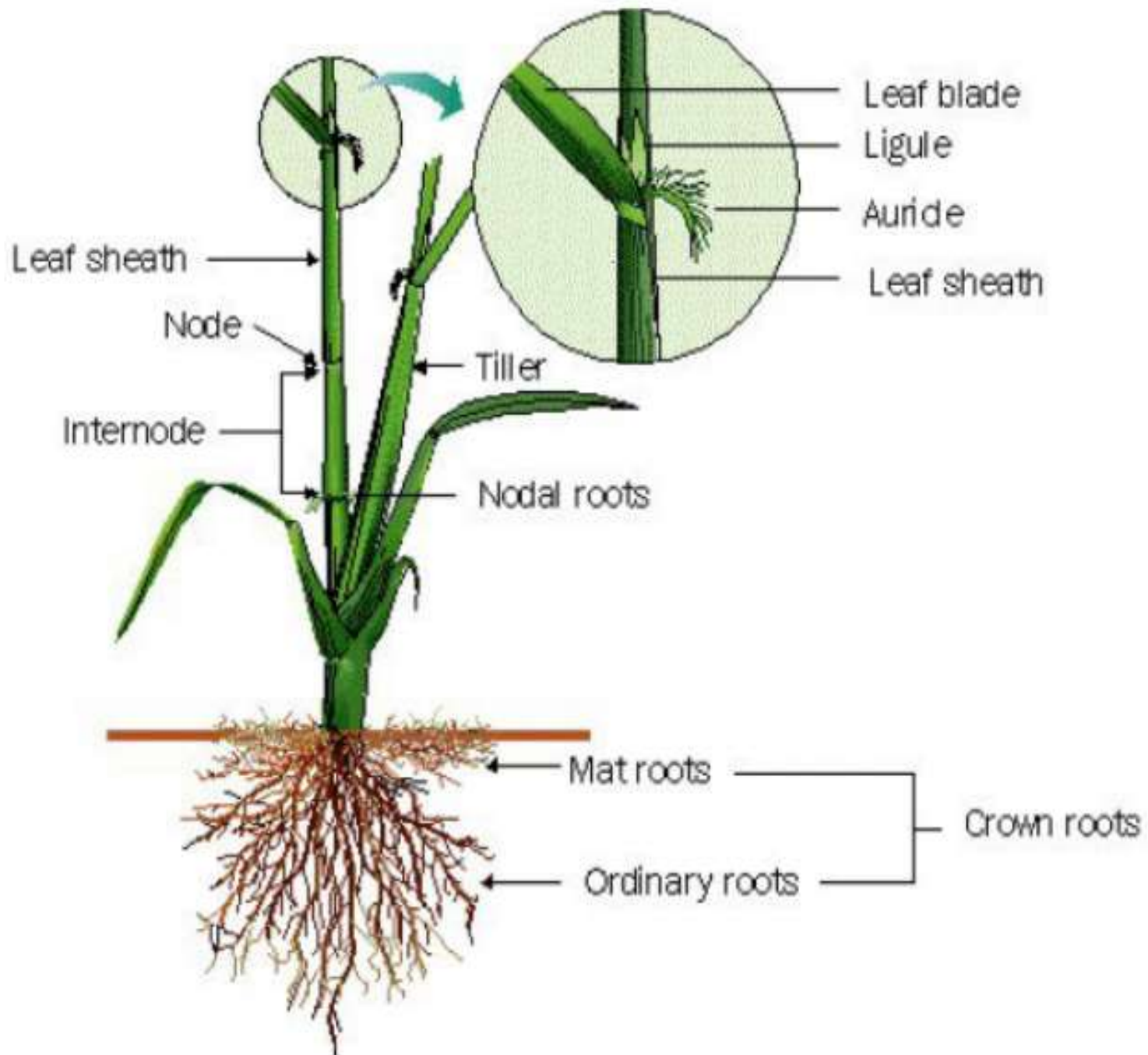


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- The inflorescence is panicle of spikelets.
- Each spikelet consists of series of 1-7 florets, usually invested by a pair of gloomes.
- Stigma is feathery.
- Flower is hermaphrodite, and basically repollinated.



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- Each floret is enclosed by lemma and pelia (fertile) as they contain reproductive organs.
- The fruit is called caryopsis.
- The food we take is endosperm.
- The rice flower contains six functioning stamens (male organ) and a pistil (female organ). At the base of the flower are two transparent structures known as 'lodicules'.
- Rice is a self pollinated crop



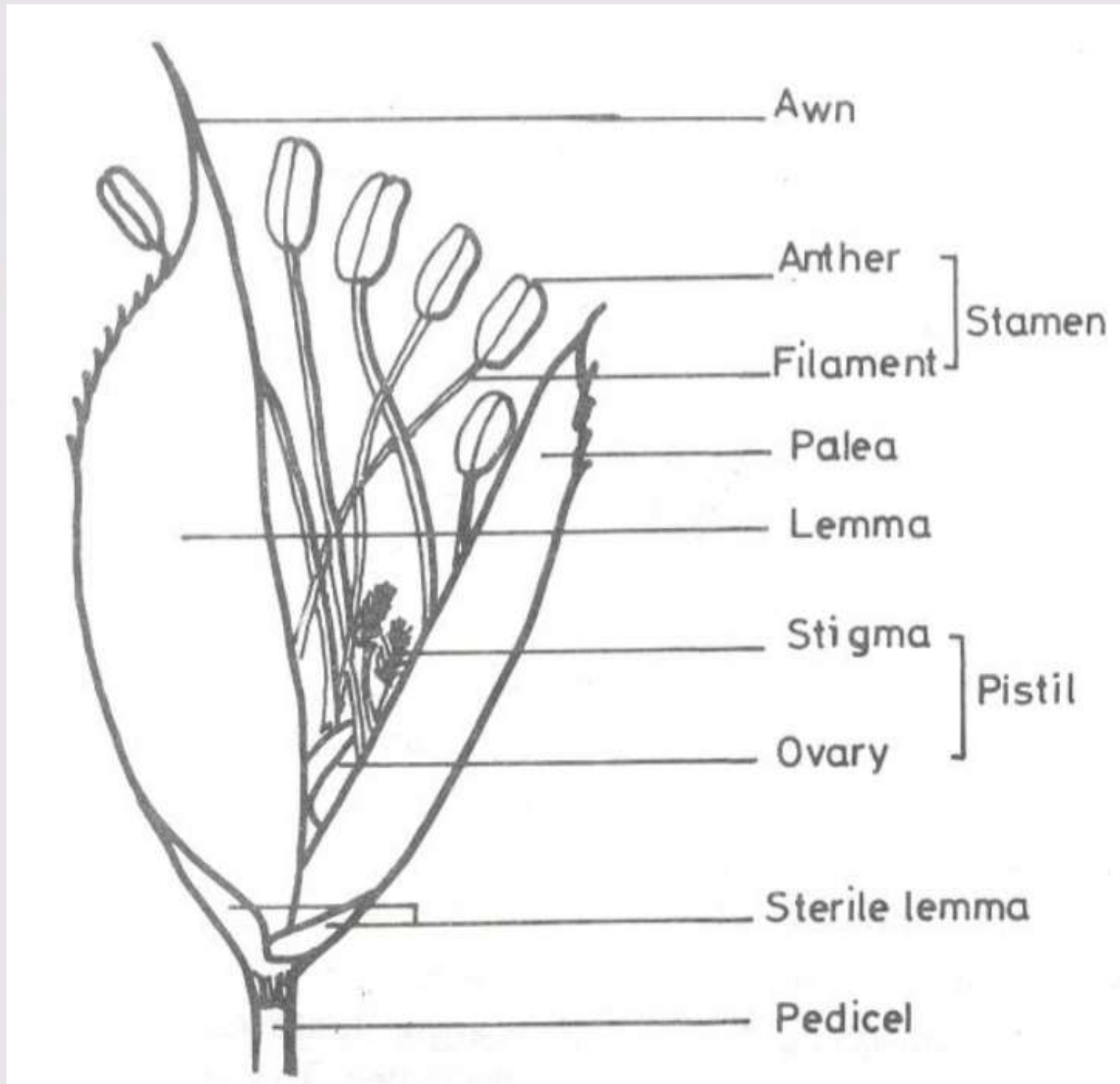
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When rice flower becomes ready to bloom, the lodicules become turgid and push the lemma and palea apart, thus allowing the stamens to emerge outside the open floret. Rupturing of the anthers then leads to the shedding of pollen grains. After the pollen grains are shed on stigma the lemma and palea close.



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Cultivation

- The main rice growing season in the country is the 'Kharif'. It is known as Summer rice as per the harvesting time.
- The sowing time of Summer (kharif) rice is June-July and it is harvested in November-December.
- Winter rice is called as Rabi rice.



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- The sowing time of summer rice is November to February and harvesting time is March to June.
- The area under summer rice is only 9% and early maturing varieties are mostly grown in this season.
- Rice can be grown under any kind of soil and climatic conditions including alkaline and acidic soil.



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Economic Importance

- Rice is an important staple food crop for more than 60 per cent of the world people.
- Ready to eat products eg. popped and puffed rice, instant or rice flakes, canned rice and fermented products are produced
- Rice straw is used as cattle feed, used for thatching roof and in cottage industry for preparation of hats, mats, ropes, sound absorbing , straw board and used as litter material.



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- Rice husk is used as animal feed, for paper making and as fuel source.
- Rice bran is used in cattle and poultry feed, defatted bran, which is rich in protein, can be used in the preparation of biscuits and as cattle feed.
- Rice bran oil is used in soap industry. Refined oil can be used as a cooling medium like cotton seed oil /corn oil. Rice bran wax, a byproduct of rice bran oil is used in industries.