

TECHNICAL SHEET

Millet intensification system by increasing sowing density and adjusting fertilization

Presentation of millet

The common name millet refers, in a broad sense, to several grass species including, among others, *Pennisetum glaucum*, *Eleusine coracana*, *Panicum miliaceum*, *Setaria italica*, *Echinochloa crusgalli* (Saïdou, 2011 cited by Kadri et al, 2019). Pearl millet or candle millet, *Pennisetum glaucum*, represents 40% of the world's millet production (Yang and al., 2012 cited by Kadri and al, 2019). It is also, the most grown species for human consumption and produces the largest grains (Mariac and al., 2006 cited by Kadri and al, 2019).

Millet is an upright plant with thick stems and heights ranging from 1.5 to 3 m, but millets of nearly 4 meters can be found (Moumouni, 2014 cited by Kadri and al, 2019). The root system is fasciculate with a single main seminal root followed by numerous adventitious roots. One of the causes of millet's good adaptation to the pedoclimatic conditions of the semi-arid zone is its extensive root development, which can reach 300 cm in depth at harvest (Ahmadi and al., 2002; ROCAFREMI, 2002 cited by Kadri and al, 2019).

Millet, *Pennisetum glaucum*, is the most drought tolerant cereal. It is grown in regions where rainfall is between 150 and 800 millimeters (Besançon and al, 1997). In Africa, 70% of production comes from the west of the continent. The main producing countries are, in decreasing order of importance: Nigeria, Niger, Burkina, Chad, Mali, Mauritania and Senegal (Besançon and al, 1997). It is often the staple food and is consumed in the form of paste, porridge, couscous, or pancakes (Besançon and al, 1997). It can also be used to make alcoholic beverages such as millet beer (Besançon and al, 1997).

Millet seed

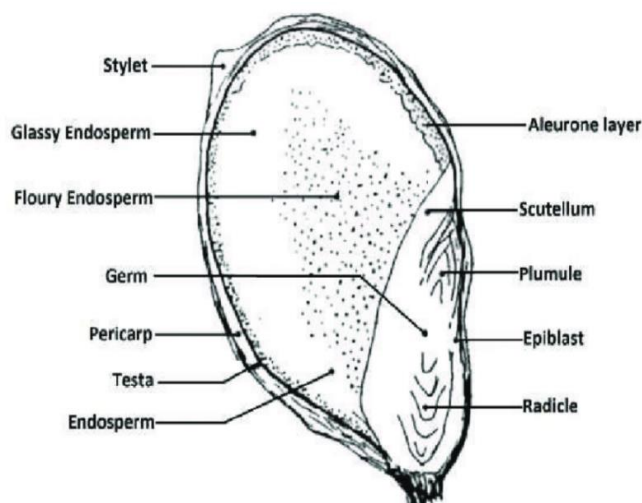


Figure 1 : Cutting of a millet seed (source : Rao and al, 2017)

Development of millet

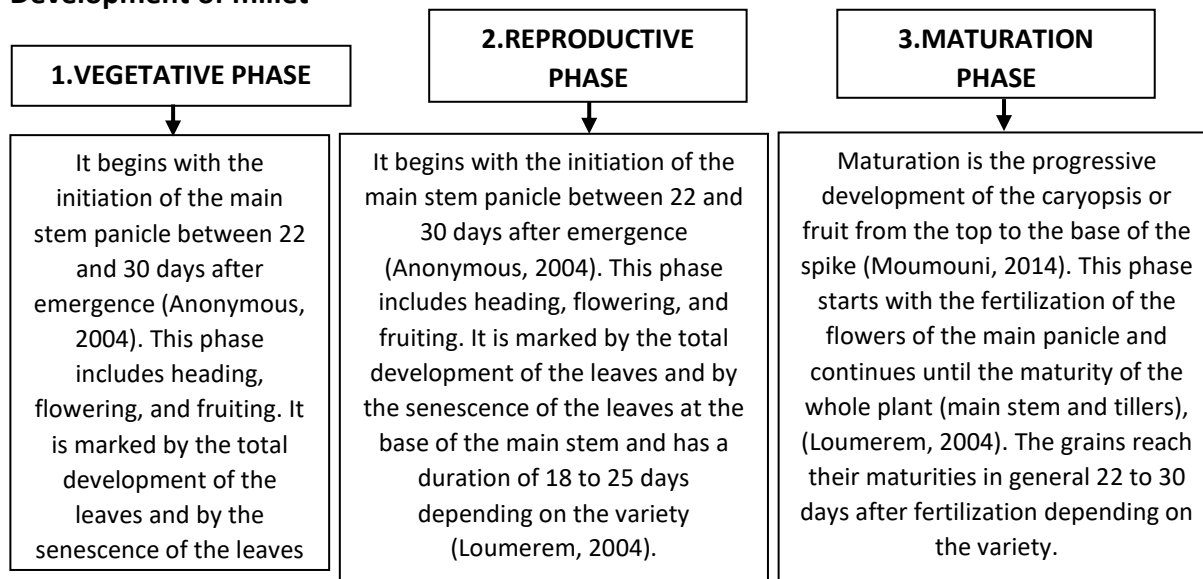


Figure 2: growth and development of millet (source : Kadri and *al*, 2019)

Characteristics of the technology

Increased seeding rate from 12346 bunches per hectare (distance between rows and within row 0.9 m × 0.9 m) to 24692 (0.9 m × 0.45m) combined with fertilization of 150 kg/ha NPK 15-15-15 +50 kg/ha urea at 15-21 days after seeding +50 kg/ha at 45 days after seeding); Increased grain and straw production by over 30%.

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