

## TECHNICAL SHEET

### Millet variety ISMI 9507

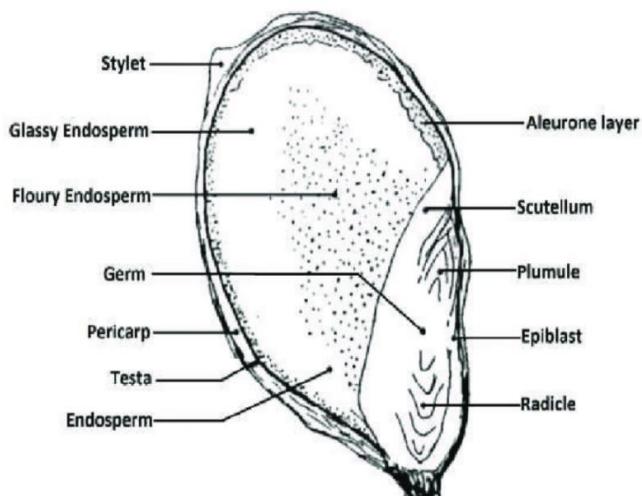
#### Presentation of millet

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).

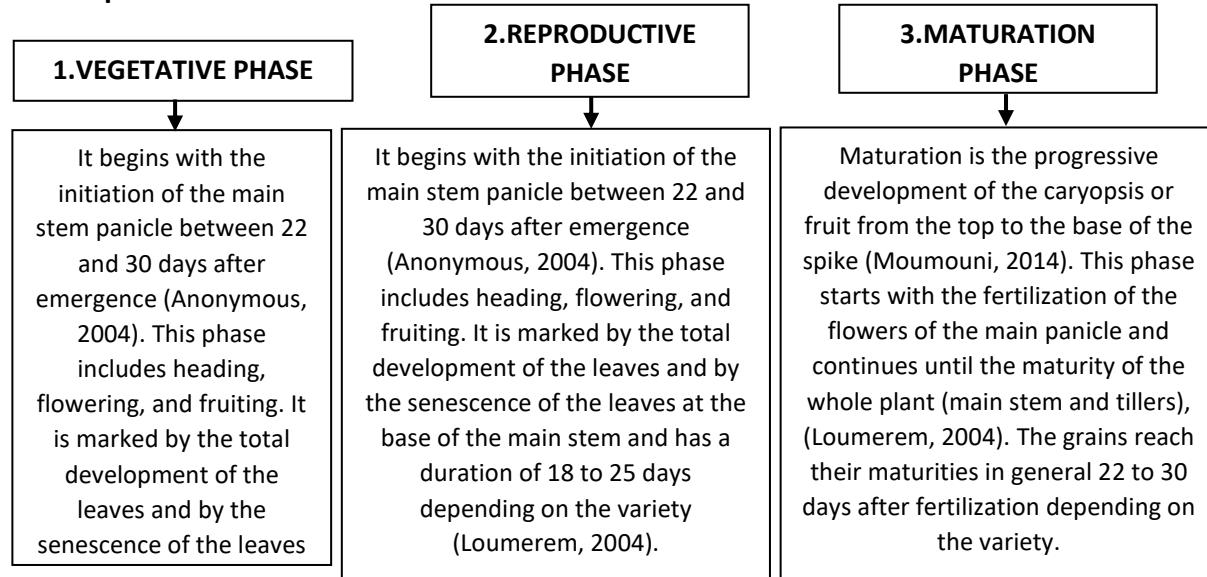
Millet, *Pennisetum glaucum*, is the most drought tolerant cereal. It is grown in regions where rainfall is between 150 and 800 millimeters (Besançon and al, 1997). In Africa, 70% of production comes from the west of the continent. The main producing countries are, in decreasing order of importance: 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

- Cycle: 85 days
- Yield: 2-3t/ha

## Bibliographic references

Ahmadi N, Chantereau J, Hekimian Lethève C, Marchand JL., Ouendeba B, (2002) : Le mil. In Mémento de l'agronome : Les céréales. CIRAD-GRET (ed). Ministère des Affaires étrangères ; 17-23 p.

Besançon G., Renno J-F., Kumar K.A. (1997) : L'amélioration des plantes tropicales ; CIRAD ; ORSTOM ; 457-478p.

KADRI A., HALILOU H., KARIMOU I. (2019) : Culture du mil [Pennisetum glaucum (L) R. Br] et ses contraintes à la production : une revue ; 524p.

LOUMEREM M. (2004) : Etude de la variabilité des populations de mil (Pennisetum glaucum (L.) R. Br.) cultivé dans les régions arides tunisiennes et sélection de variétés plus performantes. Thèse, Université de Gen, Gen, p. 266.

Mariac C, Luong V, Kapran I, Mamadou A, Sagnard F, Deu M, Chantereau J, Gerard B, Ndjeunga J, Bezancon G, Pham J, Vigouroux Y. (2006) : Diversity of wild and cultivated pearl millet accessions [Pennisetum glaucum (L.) R. Br.] in Niger assessed by microsatellite markers. Theor. Appl. Genet, 114: 49–58. DOI: <http://dx.doi.org/10.1007/s00122-006-0409-9>.

MAITI RK, BIDINGER FR. (1981) : Growth and development of the pearl millet plant. Research Bulletin N°6, ICRISAT Patancheru, Patancheru, 19 p.

MOUMOUNI KH. (2014) : Construction d'une carte génétique pour le mil, *Pennisetum glaucum* (L.) R.Br, par une approche de génotypage par séquençage (GBS). Mémoire, Université de Laval de Québec, Québec, 111 p.

PASSOT S. (2016) : Exploration du système racinaire du mil et ses conséquences pour la tolérance à la sécheresse ; thèse de Doctorat ; Spécialité : Biologie, Interactions, Diversité Adaptative des Plantes CNU : Physiologie ; Université Montpellier ; 140p.

ROCAFREMI. (2002) : Sélection et Mise à Disposition des Paysans de Variétés et de Semences Appropriées. Des Résultats du Projet P1 : 1991-1996.

SAÏDOU A. (2011) : Etude moléculaire, évolution et caractérisation de gènes impliqués dans l'adaptation du mil [*Pennisetum glaucum* (L.) R. Br.] aux changements climatiques. Thèse de doctorat, Montpellier SupAgro, Montpellier, 236 p.

Yang X, Wan Z, Perry L, Lu H, Wang Q, Zhao C, Li J, Xie F, Yu J, Cui T, Wang T, Li M, Ge Q. (2012) : Early millet use in northern China. Proc. Nat. Acad. Sci. USA, 109(10) : 3726-3730. DOI: <http://www.pnas.org/cgi/doi/10.1073/pnas.1115430109>.

### **Web sites consulted**

<https://agritrop.cirad.fr/582726/1/th%C3%A8seSixtinePassot.pdf> ; 11/08/2021 à 15h33

[https://horizon.documentation.ird.fr/exl-doc/pleins\\_textes/divers09-03/010012930.pdf](https://horizon.documentation.ird.fr/exl-doc/pleins_textes/divers09-03/010012930.pdf) ;  
11/08/2021 à 15h43

<https://www.ajol.info/index.php/ijbcs/article/view/186797> ; 11/08/2021 à 16h01

### **Other references**

Regional Center of Excellency on Dry Cerals and Associated Crops ; HOST INSTITUTION: CENTRE D'ETUDES RÉGIONAL POUR L'AMÉLIORATION DE L'ADAPTATION À LA SECHERESSE (CERAAS) ; Host country: Senegal; Coordinator: Ndjido KANE; Email: ndjido.Kane@isra.sn; [ndjido.Kane@isra.sn](mailto:ndjido.Kane@isra.sn); Telephone: +221 777232019 / +221 339514693