

TECHNICAL SHEET

Cowpea seeds for dual use

Presentation of cowpea

Cowpea has the scientific name *Vigna unguiculata* and is a member of the Fabaceae family and the genus *Vigna*. Cowpea (*Vigna unguiculata* L. Walp.) is a seed legume, an important household food staple in sub-Saharan Africa, particularly in the arid savanna regions of West Africa (Omoigui et al, 2017). (Omoigui et al, 2017). It plays an important role in human nutrition, food security and income generation for farmers and food vendors in the region. The seed is rich in protein ($\geq 25\%$), carbohydrates, vitamins as well as minerals, and complements the diet mainly consisting of cereals in countries where cowpea is a major food crop (Omoigui et al, 2017). Cowpea is a high-energy food whose consumption constitutes an important source of: i) nutrients: proteins, carbohydrates, lipids and fiber; ii) vitamins: B1, B2, B6, B9, C; iii) minerals: manganese, potassium, copper, sodium, calcium, iron, phosphorus, magnesium, zinc; iiiii) and pigments: niacin, pantothenic acid (Agossou et al, 2018). In addition to the seed, the green juvenile leaves and immature pods are consumed as a vegetable by the people; the tops (biomass) of the plants provide important nutritious fodder for ruminants, especially during the dry season (Omoigui et al, 2017). The dual use of cowpea is explained by the fact that it can produce an appreciable amount of seeds and haulms.

For good cowpea production, it requires: i) light, well-drained soils, moderately rich in organic matter, slightly acidic (pH: 6-7); ii) rainfall: 500 to 1200 mm of water per year well distributed over the vegetative cycle; iii) temperature: 28 to 30°C during the cropping season allows the species to express its performance (Agossou et al, 2018).

Cowpea seed

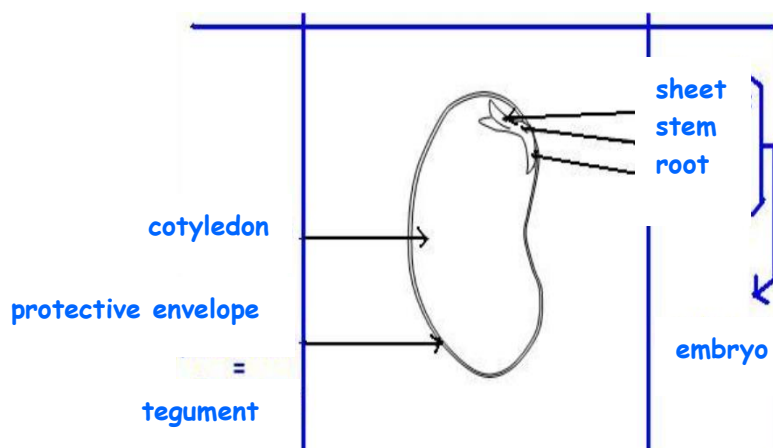


Figure 1: structure of a cowpea grain (source : <https://www.vivelessvt.com/college/la-colonisation-dun-milieu-par-les-vegetaux/> ; SVT 6^{ème} lesson, 2021)

Cowpea seed opened

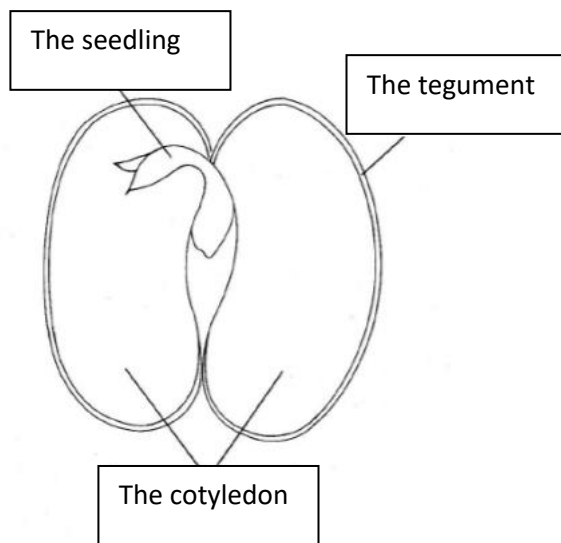


Figure 2: structure of cowpea seed opened (source : http://www.ac-grenoble.fr/ecoles/fv/IMG/pdf/la_germination_graine.pdf ; The_germination_seed, 2021)

Characteristic of the technology

- To improve the agricultural production of Niger by passing from only one harvest per year to 3 harvests including 2 harvests in full dry season;
- New tracks and solutions to food insecurity and peasant income.
- Preferential cultivation area: Rainfall: 300 to 600 mm
- Sowing-maturity cycle: Early 70 days
- Plant growth : Semi-erect
- Potential yield (in T/ha): 3 tons on average
- Yield at shelling: 80%.
- Resistance to pests : Resistant to aphids, sensitive to Thrips and Bruches, sensitive to Striga
- Weight of 1 000 grains (g) : 180 gr
- Grain : White color (red hilum)
- Tolerance: Tolerant to drought;
- Forage quality: Good forage quality

Bibliographic references

OMOIGUI (2017) : Guide sur la production du niébé en Afrique de l'Ouest ; Tropical légumes III ; IITA ; CGIAR ; 61p.

AGOSSOU (2018) : Fiche technique synthétique pour la production du niébé ; fiche technique ; 7p.

Web sites consulted

https://www.researchgate.net/publication/346319757_Fiche_technique_synthetique_pour_la_production_du_niebe_Vigna_unguiculata_L_Walp ; 29/07/2021 at 12h28

<https://www.iedafrique.org/La-culture-traditionnelle-du-niebe-au-Senegal.html> ;
29/07/2021 at 12h32

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29/07/2021 at 12h45

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29/07/2021 at 12h55

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; Telephone: +221 777232019 / +221 339514693