

Registration of Pigeonpea Cultivar Tumia

'Tumia' pigeonpea [*Cajanus cajan* (L.) Millsp.], (Reg. no. CV-271, PI 642783), originally designated as ICEAP 00068, was developed jointly by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Ilonga Agricultural Research Institute (IARI) (Ministry of Agriculture and Food Security, Tanzania). Tumia was adopted widely in several countries in eastern and southern Africa (ESA) and released in 2003 in Tanzania jointly by ICRISAT (Nairobi, ESA) and IARI. Tumia is a medium-duration pigeonpea cultivar released for its earliness, ratoonability, high quality grain attributes and adaptation to diverse agro-ecologies and cropping systems in Tanzania.

Improved pigeonpea cultivars for intensive cultivation in the region were introduced in the early 1990s mainly from the Indian sub-continent. However, during this period, pigeonpea germplasm was collected from several countries (particularly Kenya, Uganda, and Tanzania) in the region. Partly, this locally adapted germplasm was intended for use in cultivar improvement programs. Tumia was developed by selecting a single genotype (with large, green and slightly curved pods) from a landrace plant population that was collected originally from Namamleuri (at 410 masl) in southern Tanzania in 1991. To purify the genotype, it was selfed in a controlled environment (at ICRISAT, Kenya), sheltered from insect pollinators, and subsequently evaluated for agronomic performance.

Tumia was evaluated for yield potential at several locations in Tanzania before release. In 1999, Tumia produced 1.0 Mg ha⁻¹ at both Ilonga and Naliende Research Stations. During 1999/2000 cropping season, Tumia obtained 2.0 Mg ha⁻¹ at the Katrin testing location in southern Tanzania. In 2002, the yield potential of Tumia was evaluated at three testing locations (Katrin, Nachingwea, and Selian) and averaged 1.8 Mg ha⁻¹ compared with 1.1 Mg ha⁻¹ for the local check variety. Similarly, when tested at Katrin in 2003, Tumia produced 2.4 Mg ha⁻¹ compared to 1.2 Mg ha⁻¹ produced by the local check variety.

Tumia is an indeterminate, semi-spreading, medium-duration cultivar and produces two crops per year, the main crop followed by a ratoon crop. The main crop matures in less than 150 d while the ratoon crop matures in 55 ± 5 d thereafter. Both the stem and leaves are green. The stem height depends

on the prevailing temperatures. Under warm (21–24°C) and cool (18–20°C) conditions, the stem attains 2.0 m and 0.6 m, respectively. When intercropped, Tumia is compact. However, under low plant density (about 27000 plants ha⁻¹), primary (21 ± 7) and secondary (5–7) branches develop resulting in semi-spreading appearance. The open flower is yellow. The pods of Tumia are large, broad, green and slightly curved. The pods are borne in clusters at the branch terminal with 6–8 seeds in each pod. The seed is white and large (100 seed-weight = 17.0 g).

Tumia is widely adapted to the semiarid conditions in southern Africa and is recommended for cultivation in areas with low to medium (250–600 mm) annual rainfall. It is tolerant to drought. However, Tumia is susceptible to fusarium wilt, observed in some areas in ESA including Mozambique (Gwata et al., 2005a). Therefore Tumia is recommended for cultivation in areas that are free from the disease or low in inoculum particularly if the ratoon crop is required (Gwata et al., 2005b).

Contact ICRISAT (Nairobi, ESA), Legume Genetic Enhancement Program, P. O. Box 39063, Nairobi 00623, Kenya, or Agricultural Research Institute, Ilonga, P.O. Box 33, Kilosa, Morogoro, Tanzania, for all seed requests. Recipients are asked to recognize the source if it contributes to the development of a cultivar or germplasm or is used for other research purposes.

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References

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