

Contrasts for Morphological and Agronomic Attributes

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Description

Morphological analyses were used to look for genetic divergence in the agro-botanical characteristics of genotypes. The genotypes' agro-botanical characteristics' wide variation demonstrated their genetic diversity. The majority of the plants' stems and leaves were green. Tremendous contrasts for morphological and agronomic attributes were seen among 16 kenaf genotypes. Throughout the planting months, the local line exhibited the highest height values, however, in every planting month, genotype G-4521 consistently had the fewest branches. Some Kenaf genotypes' base diameter values in five months over two years ranged from 0.50 to 13.50. In every planting month, the genotypes varied significantly in the middle and top stem diameter, leaf length and width. As the planting months progressed, the number of nodes gradually increased. The month of July saw the lowest number of nodes (9.00) in genotype 2QQ and the highest number (36.5). The study showed that varieties could be identified and categorized using morphological characters.

Plant Matures

As plants, typically has divided and entire leaf types. On the stalk and branches of kenaf plants, simple leaves with serrated edges alternate from side to side. Leaf shape is influenced by cultivar and plant age. While the entire leaf cultivars produce leaves that are basically cordate (leaf-shaped) and shallowly lobed, the divided (split-leaf) cultivars have deeply lobed leaves with 3, 5, or 7 lobes per lead. The lead shape as a whole was found to be recessive and the divided leaf characteristics to be dominant. The young leaves of the kenaf plant are typically simple, entire and cordate at this stage. The younger leaves begin to develop the distinctive shape that is characteristic of the particular cultivar as the plant matures and adds additional leaves. Before the first divided leaf is produced, divided lead cultivars can produce anywhere from three to ten complete juvenile leaves. Additionally, there is a nectar gland located beneath each leaf on the main vein, has either green, red, or purple prickly branches or unbranched stalks that grow to a height of one to four meters. Depending on the variety, the plant's stalks are typically round and covered in a few tiny thorns. It is made up of two distinct types of fiber: The inner and outer bast fibers, which account for approximately 35% of the stalk's dry weight. Core fibers that make up about 65% of the dry weight of the stalk.

The selections of appropriate resources that are suited to particular environments and are well-versed in their differences are essential for the success of breeding programs. In a similar vein, farmers should only be recommended crops for commercial farming after thorough research and information about them. Evaluation of the crop genotypes that are available yields this data. However, due to the lack of information on this aspect, the crop's genotypic characteristic in a tropical nation like Nigeria is still poorly understood. Due to this, it has been challenging to identify the various crop genotypes. It has also slowed down the efficient conservation and utilization of the numerous crop varieties that are available for breeding programs or commercial cultivation. Consequently, the aim of this study was to use agrobotanical, agronomic, flowering and yield characteristics to evaluate kenaf genotypes in order to comprehend their genetic divergence.

Crop Genotypes

These were taken four weeks after the plant was planted and additional measurements were taken monthly thereafter until the plant reached maturity. Information was taken from five haphazardly examined plants in each plot in three duplicates. The plant level was estimated from the beginning the highest point of the plants with the guide of estimating tape on individual plant and the readings were taken or recorded. Four weeks after germination, the number of branches on each plant was counted and recorded. Monthly readings were taken until the plant reached maturity. In each replicate, four weeks after germination, the meter rule was used to measure the height at first branching. The foundation of the stem of each plant was estimated with tape rule, right off the bat at about a month after germination and ensuing estimations were taken at month to month stretch and the readings were recorded. Each replicate plant's trunk diameter was measured four weeks after germination and the readings were computed from other monthly measurements. Each plant's top stem was measured four weeks after germination and additional measurements were taken monthly and recorded.

This research revealed that among the kenaf genotypes, Tainung I produced the shortest plant, while the local line produced the tallest. However found that the majority of the genotypes under consideration were very tall. Reported that short plants are preferred in rice and wheat crop breeding programs due to their ability to respond to fertilizer and reduce collapse issues. All of the kenaf genotypes shared a relatively stable phenotypic trait in that the middle and top diameters were within the same range. On the other hand suggested using it to identify various kenaf genotypes. The investigated kenaf genotypes were ultraearly and early maturing. In a nutshell, the findings of this study demonstrate that genotypes are highly genetically diverse, as evidenced by the crop's wide range of botanical and agromorphological characteristics. As a result, selecting germ plasm for breeding programs is simple for plant breeders. In addition, the yield over time was influenced by the year of planting during field evaluation and these genotypes performed differently.