Available online at www.pelagiaresearchlibrary.com

Pelagia Research Library

Asian Journal of Plant Science and Research, 2022, 12(9)

ISSN : 2249-7412
CODEN (USA): AJPSKY

Measurement and Recording of the Crop's Quantitative and Qualitative Traits

Yangrong Jas*

Department of Plant Pathology, University of Nebarska, Chicago, USA.

***Corresponding author:** Yangrong Jas, Department of Plant Pathology, University of Nebarska, Chicago, USA, E-mail: Jas_Y@Led.U

Received date: August 22, 2022, Manuscript No. AJPSKY-22-15310; **Editor assigned date:** August 24, 2022, PreQC No. AJPSKY-22-15310 (PQ); **Reviewed date:** September 05, 2022, QC No. AJPSKY-22-15310; **Revised date:** September 15, 2022, Manuscript No. AJPSKY-22-15310 (R); **Published date:** September 21, 2022, DOI: 10.36648/2249-7412.12.9.017

Citation: Jas Y (2022) Measurement and Recording of the Crop's Quantitative and Qualitative Traits. Asian J Plant Sci Res Vol.12 No.9:017

Description

At various agro-ecologies, various root and tuber crops are grown in Ethiopia. Some of these are potato, sweet potato, taro, yam, cassava, anchovy and Ensete. These crops' altitude ranges from lowland to highland and each one grows differently; despite their ability to be grown at a mid-altitude, Ensete and potato are included in the highland crop category. Ensete and anchote are native to Ethiopia among these crops. Despite being included in the category of root and tuber crops and corm are edible, while the rest of the plant can be used for a variety of purposes, including animal feed, construction materials, wrapping, medicinal use and so on. Most of the time, it is a carbohydrate source with little protein, so producers supplement it with other pulse crops to make up for the lack of protein. The harvest is significant food crop after grain and heartbeat with inclusion of 25% of arable land in southern area of Ethiopia supporting more than 6-7 people for every house.

Diverse landraces are cultivated in ensete-producing regions, where farmers plant them separately for various purposes. These indigenous clones were identified by farmers' experiences. Additionally, a number of researchers reported diversity among assessed clones after conducting on-farm diversity studies and compositional analyses. In a similar vein, conducted a survey study in eight zones of the SNNPR of Ethiopia and found that 218 distinct Enset clones were identified along with their native names; the survey results that conducted in the Kembata Tembaro zone revealed the variety of Ensete clones and their uses. Farmers identified 111 distinct Ensete clones, 21 of which have medicinal uses. In addition, a survey study carried out by in the Sheka zone resulted in the identification of 90 Ensete clones based on farmer-based morphological classification techniques such as leaf, midrib and pseudo-stem color. In addition, the grouped 14 Enset clones into three categories based on their biochemical content. However, the majority of studies conducted in various Ensete-growing regions focus on phenotypic characteristics and farmer classification and naming. Measurement and recording of the crop's quantitative and qualitative traits serves as a benchmark and a source of information for conserving and carrying out additional experiments on this indigenous crop in order to confirm or disqualify the crop's diversity in the specific study area. As a result, this experiment was carried out in the Sheka zone of Southern Ethiopia to quantify the diversity of Ensete clones based on quantitative and qualitative parameters.

Quantitative and Qualitative Traits

The study was carried out in the Sheka zone of the Enset repository, which is divided into three districts: Masha, Yeki and Andiracha. These districts are located in the South of Ethiopia in the South Nation Nationality People Regional State (SNNPRS). Lowland, midland and highland are the three agro-ecologies that make up the zone, which is located between 7024 'N and 7052 'N latitude and 13 'E and 35 'E longitude. Masha can be found in highland agro-ecology at elevations ranging from 1800 MASL to 2800 MASL. This is located between 900 MASL and 1800 MASL. The zone typically experiences minimum and maximum temperatures of 21°C-29°C and annual rainfall of 1600 to 2200 millimetres.

The majority of clones were black (25.58 percent) and dark red (18.60 percent) with red (27.90 percent) and greenish red (20.93 percent) as the color of the leaf mid-rib. However, only 2.33 percent of cultivars had purple or red petioles with black stripes. There were only a few clones (4.65%) with a midrib color ranging from light red to red and purple. Which found that red was more common in the petiole and midrib than green was. Additionally, the evenness result revealed a moderate diversity index value for the pseudostem (0.58) and the color of the petiole's underside (0.54), as well as a minimum for the color of the leaf and midrib (0.04, respectively). In a similar vein, recorded a minimum and maximum Enset diversity index for leaf color and mid-rib color ranging from 0.31 to 0.95. Additionally, color values of 0.94 for the petiole underside and 0.83 for the mid-rib underside were reported. The mean ± Standard worth of all qualities in this examination was 0.48 ± 0.1 identifying as there was least morphological uniformity inside the clones recognizing variety of clones.

Variety of Clones

Provides a summary of the mean, minimum, maximum, root mean square and coefficient of variation for each parameter. As a result, the maximums of Plant Height (PH), Leaf Length (LL), Pseudostem Circumference (PsCr) were observed to be 7.2 meters, 6.80 meters, 2.90 meters and respectively. Plant height, leaf length, pseudostem circumference, leaf width and petiole length had minimums of 2 m, 2 m, 1 m, 0.4 m and 0 m, respectively, while the mean was 4.1 m, 3.60 m, 1.68 m, 0.75 m and 0.25 m, in that order. Regarding the effects of location, the mean separation result showed that for plant height and pseudostem circumference, there were significant differences between all districts. It is clear from the result that, despite the fact that clones were nested within districts (wereda), all Enset parameters rise with area altitude. Based on altitudinal variation, Masha had the largest plant height, leaf length and pseudostem than Andiracha did and Andiracha had the largest pseudostem than Yeki.

However, there was no significant difference between the three districts in terms of petiole length or leaf width. Shows that while there was no significant difference in leaf length between Andiracha and Masha, there was a difference between Yeki and Andiracha and Masha and Yeki districts. This could be because of agroecological differences: Masha and Andracha mostly live in highlands, while Yeki live in lowlands to midlands. The study's findings for both quantitative and qualitative characteristics indicated that Enset clones varied. Nevertheless, the degree of variation in various traits varies. The majority of Enset exhibit moderate variation in pseudostem and petiole color in terms of qualitative trait.