

of l-ascorbic acid. A 5 mL rate has been mixed with metaphosphoric acid, sulfuric acid and ammonium molybdate reagents.

2.9 Statistical analysis

The Statistix 10 statistical tool was used to statistically examine the data gathered for various parameters, and analysis of variance was carried out for each recorded parameter. At the 5% level of probability, the Least Significant Difference (LSD) value was used to quantify the importance of the variation in means.

3 Results and Analysis

The results obtained from the experiment are presented and analyzed in this section based on data collected at different days after transplanting (DAT). Growth, yield, and quality parameters of three swamp cabbage (*Ipomoea aquatica*) cultivars grown under the NFT hydroponic system were statistically analyzed, and significant differences among cultivars were identified. The results are organized into thematic subsections to highlight growth dynamics, morphological traits, yield components, dry matter accumulation, and quality attributes, with tables and figures used to summarize the key findings..

3.1 Morphological parameters

According to these results, V1 has a genetic advantage in the growth of height, which qualifies it as a cultivar for the production of ideal biomass of the NFT system. Significant variations have been observed in the height of the plants between the Cape Cape Cultivars to various DAT, with the exception of 35 and 42 DAT (Table 2). Over time, the height of all cultivars has gradually increased with V1 (Bari Swamp Cabbage-1) which continually produces the highest plants compared to V2 (LP-1) and V3 (Bel Green). The heights of the system varied from 30.33 cm to 27.43 cm per 56 DAT, with V1 that continues to be the highest, followed by V3 and V2 in that order.

Table 2 Plant height of swamp cabbage cultivars at different days after transplanting (DAT)

Cultivar	Plant height (cm)							
	7 DAT	14 DAT	21DAT	28 DAT	35 DAT	42 DAT	49 DAT	56 DAT
V1	15.63 a	18.20 a	22.13 a	25.03 a	26.13NS	27.40NS	29.07 a	30.33 a
V2	13.80 c	16.10 b	19.23 b	22.63 ab	24.36	25.83	26.73 b	27.43 b
V3	14.73 b	16.56 b	19.20 b	21.86 b	24.63	26.76	28.17 ab	28.70 ab
LSD (0.05)	0.88	1.05	1.52	2.89	2.76	1.92	1.52	1.72
CV (%)	2.98	3.09	3.77	6.23	5.51	3.62	2.73	2.99

Note: V1 = BARI swamp cabbage-1; V2 = La procesa swamp cabbage-1; V3 = Nice green swamp cabbage; NS = Non-significant. Means in the same column with different letter(s) are significant at the 0.05 level of probability

The differences observed in the height of the plants between the cultivars can be attributed to their genetic variations. A significant trait that affects the surrender is the height of the plant. In any case, V1 (Bari Swamp Cabbage-1) produced the highest plant, followed by V3 (Bel Green) and V2 (LP-1). Due to the innate cultivation model of the plant, it has been observed that the height of the plant has increased over time. Even environmental factors such as the availability of nutrients, the efficiency of the absorption of water and the adaptability to growth conditions can play a role, but the intrinsic varietal characteristics remain a primary determining factor. The higher performance of V1 suggest greater genetic potential for the extension of the stem and vegetative growth, probably due to the highest cell division rates and internal lengthening (2020), this shows that V1 has a higher development potential. It could be due to the varietal traits of the plant. In line with the previous results of Rahman et al. (2020).

3.2 Absolute growth rate (AGR) per plant

V1 had the highest AGR at 56 DAT (0.62 cm/day), which was much higher than V3S (0.43 cm/day), but not much of V2 (0.59 cm/day). In general, V1 (Bari Swamp Cabbage-1) had a larger AGR than V2 (LP-1) and V3 (beautiful green swamp cabbage). The higher AGR in V1 in early growth stages indicates strong vegetative growth, which could lead to better accumulation of biomass. The absolute growth rate varied significantly throughout the DAT, which indicates the different growth habits of the varieties (Table 3).