International Journal of Chemical Studies

P-ISSN: 2349–8528
E-ISSN: 2321–4902
IJCS 2019; 7(5): 2911-2912

Received: 16-07-2019
Accepted: 18-08-2019

Hina Chauhan
Department of Vegetable Science, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Dr. Jitendra Singh
Department of Vegetable Science, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Corresponding Author:
Hina Chauhan
Department of Vegetable Science, College of Agriculture, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh, India

Suitability of water spinach (*Ipomoea aquatica* Forsk.) genotypes under container gardening

Hina Chauhan and Dr. Jitendra Singh

Abstract
The present investigation entitled "Suitability of water spinach (*Ipomoea aquatica* Forsk.) genotypes under container gardening" was conducted at Research and Instructional Farm of Horticulture under Department of Vegetable Science, Indira Gandhi Krishi Vishwavidyalaya, Raipur, (C.G.) during the year 2017-18 and 2018-19. The experiment was laid out in completely randomized design having three replications with 24 genotypes (treatments) to estimate the performance of genotypes under container gardening. Observations in respect of growth, yield and quality parameters were recorded on five competitive random plants from each replication.

Keywords: Container gardening, water spinach, mean performance, genotypes

Introduction
Water Spinach (*Ipomoea aquatica* Forsk.) belongs to Convolvulaceae family and according to Edie and Ho, 1969 [2], it is supposed to be originated in China. In India water spinach is locally known as "Karmatta Bhaji", "karm sagh" or "Kalmi Bhaji". Water spinach is a herbaceous crop which can be grown as aquatic or semi aquatic tropical or sub-tropical plant and has trailing or floating habit. It can be sometimes annual or perennial, with long and hollow stem and large number of air passages with rooting at the nodes and is found throughout the India. Leaves of this plant are elliptic or ovate-oblong, cordate and flowers are infundiuliform with typical open, trumpet shape of convolvulus or bindweed flowers. The flowers are 2-2.5 cm long, white/pale purple and solitary and the fruit type is capsule (Anonymous, 1959; Edie and Ho, 1969; Gamble, 1921; Payne, 1956; Synder *et al.*, 1981) [1, 2, 3, 4, 5]

Materials and methods
Twenty four genotypes of water spinach collected from different parts of the Chhattisgarh state were utilized for the present study during 2017-18 and 2018-19 at Research and Instructional Farm of Horticulture under Department of Vegetable Science, Indira Gandhi Krishi Vishwavidyalaya, Raipur, and Chhattisgarh, India. The genotypes were evaluated in CRD with three replications having a container size of 1m2 x 0.75m2 x 59.8m2. 15 plants per container were planted. vine length (cm), number of vines per plant, number of leaves per plant, internode length (cm), number of nodes per vine, leaf length (cm), leaf width(cm), petiole length (cm), leaf:vine ratio,fresh weight of leaves (g), dry weight of leaves (g), dry matter per cent of foliage (%), moisture per cent of foliage (%), green foliage yield per plant (g) and green foliage yield (kg/container) were recorded on five competitive random plants from each replication. Green foliage yield was calculated on the basis of observed data.

Results
24 genotypes were grown in the container having same composition of media. Water and nutritional requirements were also equally fulfilled but the yield we got were different from different genotypes. Table 1. shows the performance of various genotypes based on their green foliage yield. The table shows the average over all yield of the genotypes in 6 months. The highest green foliage yield was recorded in genotype IGWS-2 (10.08 kg) followed by IGWS-1 (9.6 kg), IGWS-9 (8.28 kg), IGWS-26 (8.28 kg) and IGWS-4 (7.92 kg). These genotypes can be considered suitable for the container gardening purpose. Lowest yield was recorded in genotype IGWS-21 (4.44 Kg). Other genotypes yielded in between the highest and the lowest yielders. IGWS-3 yielded 6.48 while IGWS-5 yielded 7.4 kg. the yield recorded for IGWS-6 was 5.64 kg whereas yield of IGWS-7 was 6.36 kg. 6.96 kg of yield was recorded for IGWS-

10, 7.32 kg for IGWS-11 and 6 kg for IGWS-12. IGWS-13 gave the green foliage yield of 6.24 kg while 7.44 kg was recorded for IGWS-14. The green foliage yield recorded for IGWS-15, IGWS-16, IGWS-17, IGWS-18, IGWS-19, IGWS-20 were 6.96 kg, 7.56 kg, 7.56 kg, 6.84 kg, 6.36 kg and 7.2 kg respectively. IGWS-22 yielded 6.24 kg green foliage yield while IGWS-23 yielded 6.6 kg and IGWS-25 yielded 7.8 kg green foliage yield.

Table 1: Average Green foliage yield of water spinach genotypes during 6 Months 2017-18 and 2018-19

S. No.	Genotypes	Yield (kg/container)
1	IGWS-1	9.6
2	IGWS-2	10.08
3	IGWS-3	6.48
4	IGWS-4	7.92
5	IGWS-5	7.44
6	IGWS-6	5.64
7	IGWS-7	6.36
8	IGWS-9	8.28
9	IGWS-10	6.96
10	IGWS-11	7.32
11	IGWS-12	6
12	IGWS-13	6.24
13	IGWS-14	7.44
14	IGWS-15	6.96
15	IGWS-16	7.56
16	IGWS-17	7.56
17	IGWS-18	6.84
18	IGWS-19	6.36
19	IGWS-20	7.2
20	IGWS-21	4.44
21	IGWS-22	6.24
22	IGWS-23	6.6
23	IGWS-25	7.8
24	IGWS-26	8.28

Conclusion

On the basis of mean performance, IGWS-2, IGWS-1, IGWS-26, IGWS-9, and IGWS-4 were found promising for container gardening in terms of green foliage yield (kg/container). These genotypes can be considered suitable for the container gardening purpose.

References

1. Anonymous. Wealth of India, raw materials. CSIR, New Delhi. 1959; 5:237.
2. Edie HH, Ho BWC. *Ipomoea aquatica* as a vegetable crop in Hong Kong. Econ. Bot. 1969; 23:32-36.
3. Gamble JS. Flora of Presidency of Madras, India, 1921.
4. Payne WJ. *Ipomoea reptans* Poir. A useful tropical fodder plant. Trop. Agric. Trin. 1956; 33:302-305.
5. Synder GH, Morton JF, Genung WG. Trials of *Ipomoea aquatica*, nutritious vegetable with high protein and nitrate extraction potential. Proc. Fla. State Hortic. Soc. 1981; 94:230-235.