



Universal Impact
Factor 0.9285:2012;

1.2210:2013

Index Copernicus

ICV 2011: 5.09,
2012: 6.42, 2013:
15.8, 2014:89.16,
2015:78.30

NAAS Rating

2012 : 1.3;

2013-16:2.69

2017-18: 3.98

SJIF 2012: 3.947,

2013: 4.802

Infobase Index

2015:4.56

Cosmos Impact Factor

2015: 4.366

Received on:

10th December 2017

Revised on:

15th January 2018

Accepted on:

20th January 2018

Published on:

1st February 2018

Volume No.

Online & Print

96 (2018)

Page No.

18 to 21

Life Sciences Leaflets
is a international open
access print & e
journal, peer reviewed,
worldwide abstract
listed, published every
month with ISSN, RNI
Free- membership,
downloads and access.

A CONTRIBUTION TO THE FLORA OF PATAN TALUKA (NORTH GUJARAT)

BALDEV V. PANCHAL, MUKESH H. GORAKHA,
JYOTSNA S. CHAUDHARY AND AARTI P. PAREKH

DEPARTMENT OF BOTANY,

SHETH M.N. SCIENCE COLLEGE (H.N.G.U)

PATAN – 384 265. (GUJARAT-INDIA).

Corresponding author's e-mail: baldevpanchal1234@gmail.com

ABSTRACT:

Lemna aequinocialis Welw. is a newly observed as naturalized in Patan taluka, Gujarat, India. Description and Photographs of the plant are provided.

KEY WORDS: *Lemna, Sarswati River, Patan, Gujarat.*

INTRODUCTION:

Duckweed is a floating aquatic macrophyte belonging to the botanical family Lemnaceae, which can be found world-wide on the surface of nutrient rich fresh and brackish waters (Zimmo, 2003). Duckweeds (Lemnaceae) are often abundant in ditches and ponds (Landolt, 1986). Lemnaceae species often grow together in nature. Therefore, many Collection samples contain more than one species, some of which may not be recognized as different at first glance. Understandably, the small size, rarity of flowering, and extreme reduction of *Lemna* L. plant body have made them difficult subjects for systematic investigations (Landolt, 1986 and Crawford *et al.*, 1996, 2005). Genus *Lemna* is the largest of the five genera in the family, and section *Lemna* is among the most complex and confusing groups within the entire family (Crawford *et al.*, 2005).

STUDY AREA:

Patan district is located in the northern part of the state with its headquarters at Patan town. The district covers an area of 5730 sq. km with total population of 11, 81,941. The district is surrounded by Banaskantha district

in the north and northeast, Mehsana in its south and southeast and Kachchh and Little Rann of Kachchh in the east. Total 1037 wetlands are mapped including 416 small wetlands (< 2.25 ha) with 34268 ha area. Major wetland category of the district is Mud flats, Rivers/streams, Reservoirs and Tanks/ponds. Wetlands are more concentrated in the western part of the district. Area under aquatic vegetation in post-monsoon is about 2973 ha and slightly less during pre-monsoon (1280 ha). Open water spread of the wetlands is significantly higher in post monsoon (11595 ha) than during pre-monsoon (2593 ha). Turbidity of water is low to moderate in both the seasons.

Patan district lies between 23° 52' n latitude and 72° 08' e longitude. Patan is situated on 82.30 meter height from the sea level in the Northern part of Gujarat. The region is having the minimum temperature as low as 5°C to 10°C and maximum temperature as high as 40°C to 48°C. The average rain fall in the region is about 701 mm. Patan is situated in the northern part of Gujarat on the bank of Saraswati river. Saraswati river is a river in western India in Gujarat whose origin is Aravali hill. Its basin has a maximum length of 360 km. The total catchment area of the basin is 370 square kilometers (140 sq mi). Patan and Sidhpur are located on the banks of Sarawati river.

MATERIALS & METHODS:

During floristic exploration in various parts of Patan district of Gujarat state, a few specimens of *Lemna* were collected from Patan taluka. On critical study of literature, the specimens were identified as *Lemna aequinoctialis* Welw. A species unrecorded from Patan flora. Hence, it is reported here as an addition to the flora of Patan. A brief description along with photographs is provided to facilitate easy identification of this species in field.

Following is the other Genus *Lemna* of family Lemnaceae with the identification key

1. Plant root less.....*Wolffia*
1. Plant rooting.....
 2. Roots solitary.....*Lemna*
 2. Roots several.....*Spirodella*

Identification key of the *Lemna aequinoctialis* Welw.

1. Fronds tailed:
 2. Fronds , asymmetric , obovate or obovate- oblong, margins smooth... *Lemna aequinoctialis*
 2. Fronds symmetric, young once hastate, other set crosswise to young ones, elliptic-lanceolate or oblanceolate, margin near tip serrate..... *L. trisula*
1. Fronds not tailed...*L. gibba*

RESULT:

Lemna aequinoctialis Welw. New York 2: 245. 1843. Type: Lecto, photo! STU; Isolecto, GH (00061635), MO! KANU, NY (Landolt, 1986). *Lemna perpusilla* var. *trinervis* Austin ex Gray, Manual ed. 5: 479. 1867. *Hydrophace perpusilla* (Torr.) Lunell, Amer. Midl. Naturalist 4(6): 237. 1915.

Lemna commonly called Duck-weed.

Fronds dark green, solitary or 2–3 together, usually one visible through pouch, orbicular-ovate 3–4 × 0.8–2 mm long; upper surface often with 2–3 papules above the node which are bigger than the apical one. Stipe absent. Roots one; root sheath winged, 0.2–0.5 mm. Inflorescence produced in lateral budding pouches; male flowers 2, ca. 0.14 mm; anthers divaricate, globular, ca. 0.01 mm, dehisce by transverse slit. Female flower composed of one gynoeceium, ca. 0.8 mm; ovary globose, hyaline, with 2–3 ovules; style one, terminal, short; stigma one, cup shaped, produces stigmatic fluid during pollination. Fruit utricle, ca. 0.05 mm, attached on the inner surface of the pouch. Distribution in India: throughout the country.

ACKNOWLEDGEMENTS:

I am very heartily thankful to Dr. N.K. Patel Associated Professor & Head of the Botany Department, Sheth M.N. Science College, Patan and Dr. P.K. Patel, HOD, Science College, Godhra for giving me an excellent and perfect guidance at any moment during this work. I want thank Dr. P.J. Vyas, Principal, Sheth M.N. Science College, Patan of the for providing us the facility of the laboratory for research work. I also express my deep sense of gratitude to Dr. A.J. Parmar for helping me during my field work.

REFERENCES:

National Wetland Atlas, Gujarat (2010). Space Applications Centre (ISRO), Ahmedabad, 198p.

Shah, G. L. (1978). Flora of Gujarat State-I & II. Sardar Patel University, V. V. Nagar.

www.theplantlist.org

Halder, S. and Venu, P. (2012). *The taxonomy and report of flowering in LemnaL. (Lemnaceae) in India*, Current Science, 102 (12): 1629-1632.

Patel, P.K. (2004). *Studies on Flora along the Riverbank of the Saraswati River from Mukteshwar to Patan District with Ethnobotanical Aspect*. Ph.D. thesis, H.N.G. University, Patan.

Patel¹, P.K. and Sorathia², K.D. (2017). *Lemna minor* L. (Lemnaceae) naturalized in Panchmahal district, Gujarat, India, *Life Sciences Leaflets* 94:1-4.

Patel, N.K. (2001). Study of angiospermic plants with relation to phytosociological and Ethnobotanical study of Danta taluka, Dist. B.K. Ph.D. thesis. H.N.G.Uni, Patan.

<https://sites.google.com/site/efloraofindia/hom>

<https://plants.usda.gov/java/classificationservlet?source=display&classid=leae2>

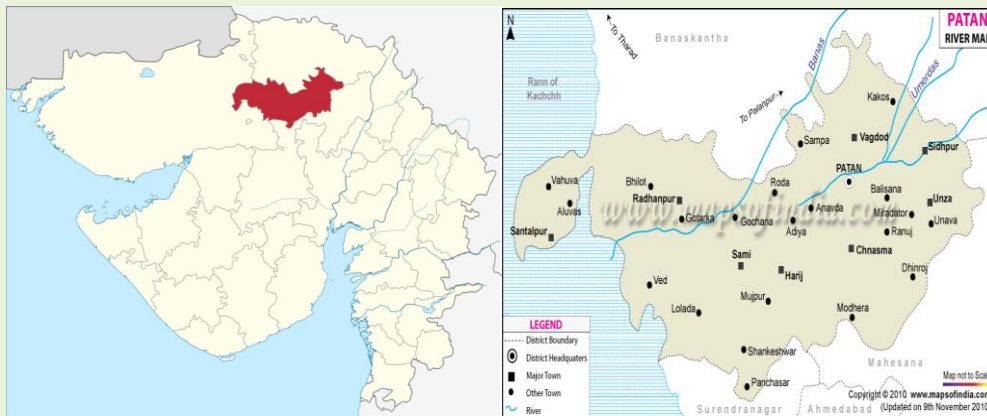


Fig.1: Location of Patan

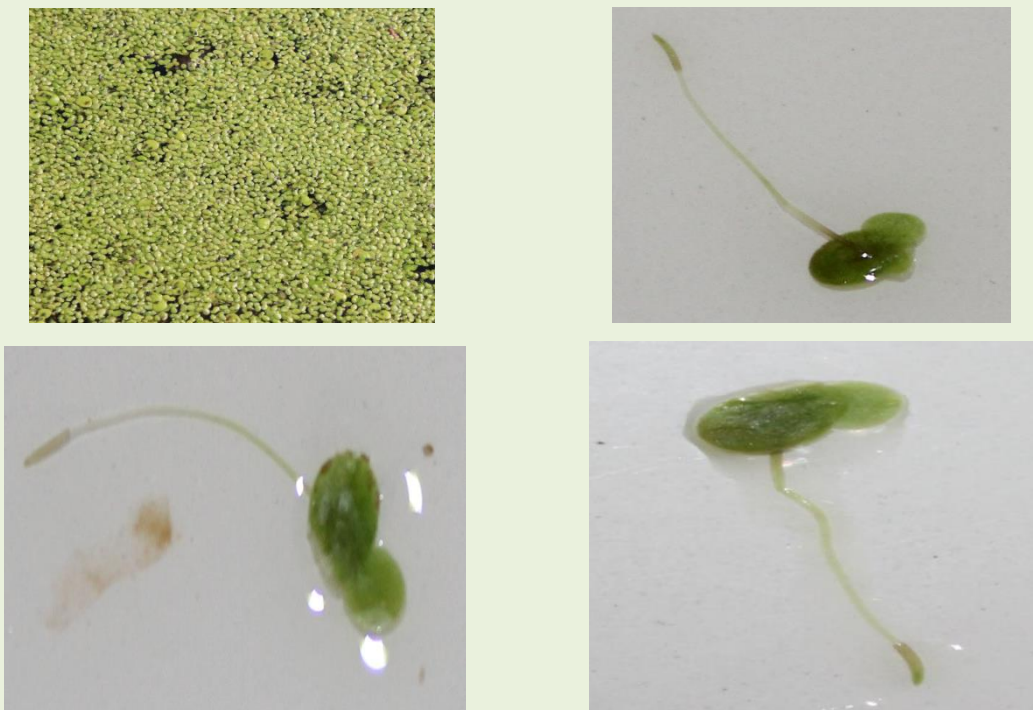


Fig.2: *Lemna aequinoctialis* Welw.