Vigna dalzelliana (O. Kuntz) Verdc.: A New Distributional Record from Andaman Islands, India

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The present paper deals with a new distributional record of *Vigna dalzelliana* from Andaman Islands. Growing side by side with *Vigna pilosa*, this species is entirely different from the hitherto reported *Vigna* species from Andaman Islands. As compared to the mainland specimens of *V. dalzelliana*, it is more robust and has deep yellow flower colour and high seed mottling.

Key Words: *Vigna dalzelliana*, Distribution, Andaman Islands

Vigna Savi, a genus of about 150-200 species distributed in tropical Africa and Asia is represented by 7 species in Andaman Islands. They are Vigna adenantha (G. Mey.) Marechal, Mascherpa and Stanier, *V. luteola* (Jacq.) Benth., *V. marina* (Burm.f.) Merr, *V. pilosa* (Willd.) Baker and the cutivated taxa *V. unguiculata* (L.) Walp., *V. mungo* (L.) Hepper and *V. trilobata* (L.) Verdc. Of these *V. marina* occurs in Great Nicobar Islands also (Hajra and Rao, 1999). While collecting crop genetic resources from Andaman and Nicobar Islands (A&N Islands), the first author has come across a strikingly different entity which upon detailed examination at Botanical Survey of India, Port Blair (PBL) was found to be not represented in PBL. The specimen was collected in 2006 as seed and herbarium (IC541388; JS/06-22) from Janakpur, Rangath, Middle Andaman, A&N Islands at 12.508ºN, 92.908ºE and 19 msl (Fig. 2). Herbarium specimens were compared with labeled specimens at MH and identified as *V. dalzelliana* (O. Kuntz.) Verdc. Specimens were deposited at PBL and National Herbarium of Cultivated Plants (NHCP). Seeds were regenerated at National Bureau of Plant Genetic Resources (NBPGR) Regional Station, Thrissur, Kerala, India during June to December 2007 and detailed morphological observations were made. Multiplied seeds were deposited for long-term storage at National Gene Bank, NBPGR, New Delhi (Fig. 3). In a subsequent exploration to the Andaman Islands in November 2008, three more collections were assembled (IC567253:JAS-08-29; IC567255:JAS-08-31 and IC567264:JAS-08-40).

Natural Distribution: It is reported to occur in Indian sub-continent, Thailand, Cambodia, Vietnam and Philippines. In India it is reported to be occurring widespread in eastern and southern India in Bihar, Eastern Uttar Pradesh, Gujarath, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Rajasthan (Sanjappa, 1992). It is not reported in the Flora of Java by Baker and Brink (1963).

Description of the Species as per Cooke (1992):

Herbaceous, twining or creeping, rooting at nodes (in the absence of support), stems filiform, striate, glabrous. Leaves trifoliate, petioles ½ to 1 ½ in., ovate or rhomboid-ovate with a tendency to become lobate, acuminate, more or less hairy on both surfaces, green above, pale beneath, petiolules 1/16 in. long, stipule minute lanceolate. Flowers in capitate, 2-3 flowered racemes, peduncle filiform, 1-2 in. long, pedicels short, bracteoles 1/5 in. long, linear-subulate. Calyx 1/10 in. long, glabrous, teeth shorter than the tube, the 2 upper connate except at the tip, the two lateral triangular, obtuse, the lowest longer, lanceolate. Corolla 1/5 in. long, yellow. Pods 1¼to 2¼ in. long, sub-cylindric, slightly curved, beaked, quite glabrous. Seeds 8-10, sub-cylindric, truncate, smooth, dark brown.

Specific Observations on Specimen of IC541388 (Fig. 1)

Seed germination hypogeal, hypocotyl colour greenish purple, primary leaves petiolate with cordate shape; annual climbing herb, stem tender, greenish purple with thread like white hairs; leaves trifoliolate, sparsely pubescent, petiole and petiolule green, terminal petiolule length medium (1.0 cm), leaflets thin, ovate, apex acute, not lobed, sparsely pubescent with white short hairs less than 0.5 mm, green with no white patches; stipules peltate, narrowly elliptic, minute, ciliate; inflorescence, auxiliary, flowers many, dense, racemes above canopy; peduncle greenish purple, sparsely pubescent, long (12.1-20.0 cm); flower-bracteole size minute, lanceolate, shorter than

Fig. 1: Plant type of specimen collected from Andaman

calyx, ciliate; calyx purplish green, flower bud small, flower color golden yellow, corolla yellow, keel curving through more than 260 degrees, pocket length medium; pollen exine with coarse reticulation. Style curving through more than 260 degrees; legume-pods glabrescent, slightly curved, length long (5.1-8.0 cm) with pointed beak, pod cross section semi-flat, pod attachment to peduncle is pendent, no. of pods per peduncle 2-3, immature pod colour intermediate green, mature pod colour tan. Seed - 8–14 per pod, oblong, size 3.26x1.58mm, greyish green mottled with black, lustrus mottling on seed surface heavy, hilum convex.

It varies from the iso-climatic Kerala (IC539806) and Karnataka (IC539776) in its overall robustness, prolific bearing, long duration, dark yellow flower colour, bigger flower size and intense seed mottling as depicted in Table 1. By virtue of its robustness it has potential as legume green fodder and cover crop. Since its floor coverage is high, ecological function as soil erosion control agent is worth investigating. Repeated collections from fairly distant localities adjoining forest habitat indicates its natural distribution rather than introduction and spread.

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Table 1. Comparative growth performance of representative collections

Characters	IC541388	IC539806	IC539776
Collection locality*	Middle Andaman, A&N Islands	Poomala, Thrissur, Kerala	Athur R.G.N. Park, Hassan, Karnataka
Collection habitat	Growing wild side by side with *Vigna pilosa* in deep soil on ridges of fresh water streams	Growing wild along road sides in laterite soil	Growing wild along the paddy field bunds
Leafiness	Abundant	Intermediate	Intermediate
Leaf length (cm)	7.70	4.37	8.50
Leaf width (cm)	5.97	3.87	6.30
Petiole length (cm)	9.83	9.17	8.50
Flower size (mm^2)	1.92	1.42	1.37
No. of branches	4	2	2
Days to 50% flowering	144	132	136
Flower colour	Yellow	Pale yellow	Pale yellow
Days to first pod maturity	171	132	136
No. of pods/plant	682	310	303
Pod length (cm)	5.10	4.76	3.16
No. of seeds/pod	9.00	8.00	4.20
Seed yield/plant (g)	48.16	18.12	39.34
100 seed weight (g)	1.29	0.98	1.01
Seed mottling intensity**	Dense	Sparse	Sparse
Days to senescence	171	156	155

* location depicted in Fig 1; ** depicted in Plate 2

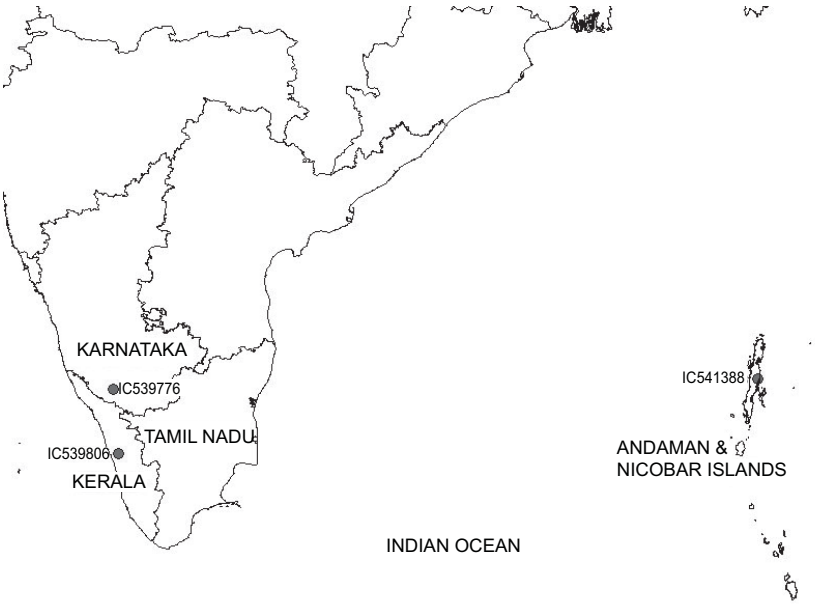

Fig. 2: Map of collection sites

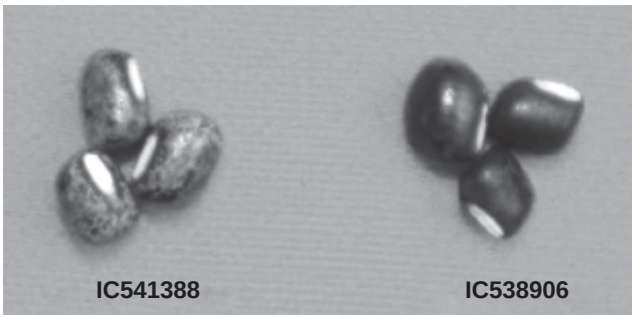

Fig. 3: Seed variability in *Vigna dalzelliana*

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