

## インド・タミルナドゥ州におけるマメ科植物遺伝資源 多様性の保全 2008年

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## Collection and Conservation of Leguminous Crops and Their Wild Relatives in Tamil Nadu, India, 2008

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### Summary

Based on the Memorandum of Understanding between the National Institute of Agrobiological Sciences, Japan and the Tamil Nadu Agricultural University, India, a field survey was conducted in Tamil Nadu State, India from March 1 to 16, 2008. As a result, 32 accessions of leguminous plants consist of the genus *Vigna*, *Lablab*, *Phaseolus* and *Macrotyloma* were recorded and seed samples of 29 accessions consisting of 17 cultivated and 12 wild accessions were collected. All the seed materials collected were deposited at Tamil Nadu Agricultural University, India.

### Introduction

In order to facilitate the collaborative research activities on plant genetic resources, the National Institute of Agrobiological Sciences, Japan and the Tamil Nadu Agricultural University, India agreed to establish the Memorandum of Understanding (MOU) on Joint Research of Genetic Resources in April, 2007. This is a report of collaborative field survey on leguminous plants in Tamil Nadu, India under this MOU.

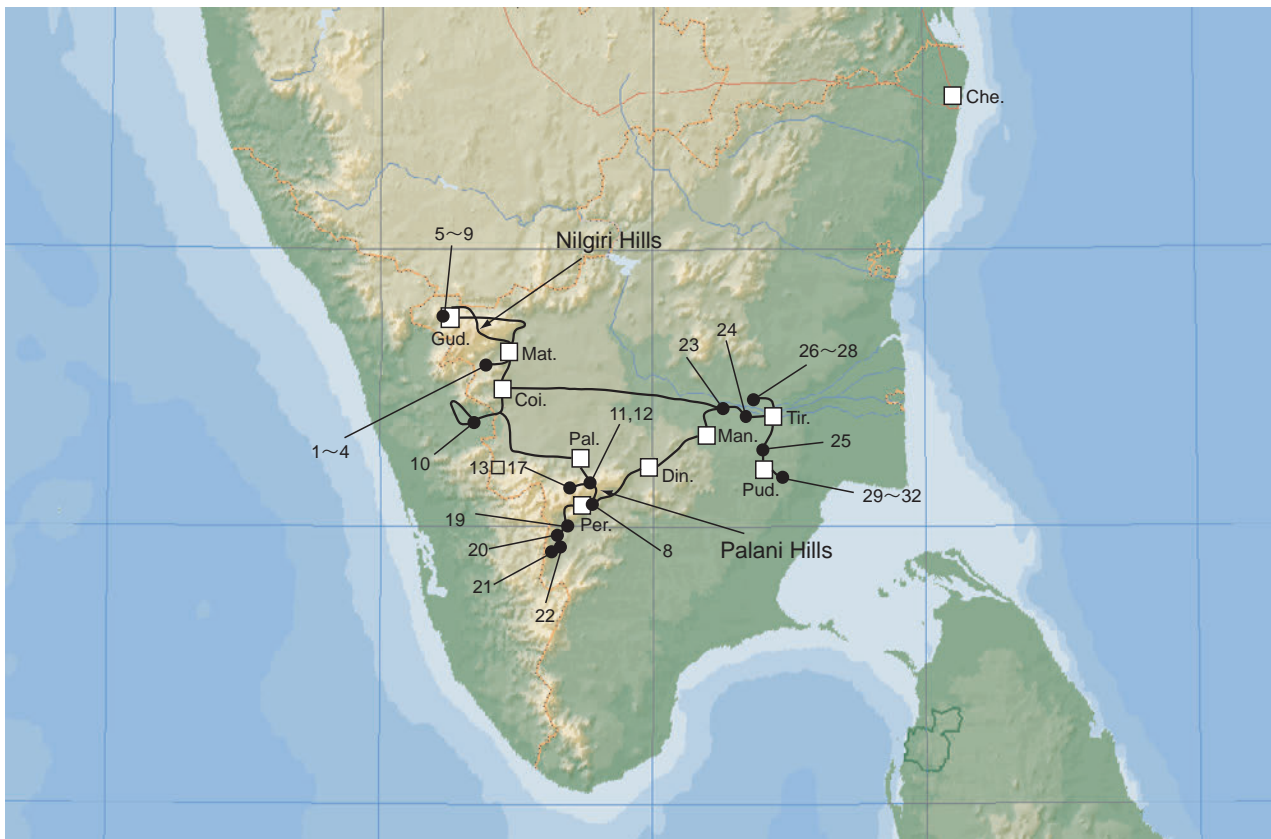


Fig. 1. Exploration route (—), collection sites (●) and major towns (□) in Tamil Nadu, India

Town name abbreviations:

Che (Chennai), Coi (Coimbatore), Din (Dindigul), Gud (Gudalur), Man (Manapparai), Mat (Mattupalayam), Pal (Palani), Per (Periyakulam), Pud (Pudukkottai), Tir (Tiruchirappalli)

## Methods

We surveyed mainly in the central part of Tamil Nadu State by car from 3<sup>rd</sup> to 10<sup>th</sup> March, 2008 as shown in Table 1 and Fig. 1. Seeds, herbarium specimens and root nodules (if available) were collected. Information on collection sites including village name, altitude, latitude, longitude, habitat, cultural practices and other ecological data of the collection sites were recorded as passport data (Table 3). Identification of wild *Vigna* plants was done based on a key prepared by Tomooka et al. (2002, p.26-28).

## Results and Discussion

A total of 32 legume accessions including the genus *Vigna*, *Lablab*, *Phaseolus* and *Macrotyloma*, consist of about 15 species were recorded and seed samples were collected for 29 accessions (Table 2 & 3). Collected seed samples are conserved at Tamil Nadu Agricultural University. They consist of 16 cultivated, 1 escaped, and 12 wild accessions.

### Collected cultivated and wild legumes

Nine cultivated legume species were collected (Table 2). They are *Lablab purpureus* (hyacinth bean, 4 accessions), *Macrotyloma uniflorum* (horse gram, 1 accession), *Phaseolus vulgaris* (common bean, 2 accessions), *Vigna aconitifolia* (moth bean, 2 accessions), *Vigna mungo* (black

Table 1. Itinerary 日程表 (インド・タミルナドゥ州)

Day	Date		Itinerary	Activities	Stay
1	2008/3/1	Sat	(TG641) Tsukuba --- Narita 10:45 --- 15:45 Bangkok	Transportation	Bangkok
2	2008/3/2	Sun	(TG521) (9W3533) Bangkok 10:55 --- 12:45 Chennai 19:10 --- 20:20 Coimbatore	Transportation	Coimbatore
3	2008/3/3	Mon	Tamil Nadu Agricultural University, Mettupalayam area	Discussion/ Exploration	Coimbatore
4	2008/3/4	Tue	Coimbatore -- Mettupalayam -- Gudalur (Nilgiri Hills)	Exploration	Gudalur
5	2008/3/5	Wed	Gudalur -- Mettupalayam -- Coimbatore (Nilgiri Hills)	Exploration	Coimbatore
6	2008/3/6	Thu	Coimbatore -- Palakkad (Kerala State) -- Coimbatore	Exploration	Coimbatore
7	2008/3/7	Fri	Coimbatore -- Palani -- Kodaikanal (Palani Hills)	Exploration	Kodaikanal
8	2008/3/8	Sat	Kodaikanal -- (Palani Hills) -- Periyakulam	Exploration	Periyakulam
9	2008/3/9	Sun	Periyakulam -- Teni -- Dindigul -- Tiruchirappalli -- Pudukkottai	Exploration	Pudukkottai
10	2008/3/10	Mon	Pudukkottai -- Tiruchirappalli -- Mukkombu -- Pudukkottai -- Vamban --	Exploration	
11	2008/3/11	Tue	-- Coimbatore	Meeting/ Discussion	Coimbatore
12	2008/3/12	Wed	Coimbatore (Tamil Nadu Agricultural University)	Discussion/ Presentation	Coimbatore
13	2008/3/13	Thu	(S2 234) (TG326) Coimbatore 11:45 --- 12:30 Bangalore 00:30 ---	Transportation	On plane
14	2008/3/14	Fri	--- 05:45 Bangkok --- Kasetsart University	Transportation/ Discussion	Kamphaeng Saen
15	2008/3/15	Sat	Kasetsart University -- Bangkok	Discussion/ Transportation	Bangkok
16	2008/3/16	Sun	(TG676) Bangkok 08:20 --- 16:00 Narita -- Tsukuba	Transportation	

gram, 1 accession), *Vigna radiata* (mungbean, 1 accession), *Vigna stipulacea* (2 accessions) and *Vigna unguiculata* (yard long bean 1 accession, cowpea 2 accessions). One natural population of *Phaseolus lunatus* was found and is considered an escaped population.

For wild legumes, *Lablab* sp. (3 accessions), *V. hainiana* (1 accession), *V. mungo* var. *silvestris* (1 accession), *V. radiata* var. *sublobata* (1 accession), *V. stipulacea* (1 accession), *V. trilobata* (1 accession), *Vigna vexillata* (3 accessions) and unidentified wild legume (1 accession) were collected.

#### **Horse gram (*Macrotyloma uniflorum*)**

A horse gram accession (TN27) was collected at lowland (alt. 87 m) of Tiruchchirappalli province. It is cultivated in monoculture. A farmer cultivating this species told that it is highly photosensitive.

#### **Hyacinth bean (*Lablab purpureus*) and wild species (*Lablab* sp.)**

Hyacinth bean is common in Tamil Nadu. They are cultivated for young pods as vegetables. In Teni province, we observed cultivation of the improved variety called CO1 (TN18). Many stink bugs were gathered on young pods at this site. Hyacinth bean are cultivated from lowland (TN18, alt. 297 m) to highland (TN15, alt. 1735 m) either in monoculture (TN2, 18), as a garden crop (TN15) or as a mixed crop (TN20). At the site of the Palani Hills, two wild (or escaped) populations of *Lablab* plants (TN16, TN17, alt. 1735 m) were found growing naturally on a tea plantation slope. Another wild *Lablab* accession was collected at the lowlands of Teni province (TN22, alt. 361 m).

#### **Common bean (*Phaseolus vulgaris*)**

Common bean was found cultivated only in the highlands of the Palani Hills (TN13, 14, alt. 1735 m). The common bean variety had red and brown seeds.

#### **Lima bean (*Phaseolus lunatus*)**

A natural population of *P. lunatus* (TN8) was found beside a path near Gudalur of the Nilgiri Hills. The site was a lowland depression which is used as a pasture land. Plants have rather small dark reddish black seeds but have non shattering pods. They are considered as an escaped population from lima bean cultivation.

#### **Moth bean (*Vigna aconitifolia*)**

Two accessions of moth bean were collected in the lowlands (TN23, alt. 98m; TN26, alt. 87 m). A farmer cultivating TN23 told us that it was a wild type based on its morphological traits (deeply lobed leaflets and long trailing stems). Later we have observed the morphology of cultivated type of moth bean at the National Pulses Research Centre, located at Vamban, Pudukkottai province and recognized the difference of leaflet morphology. The cultivated type showed shallowly lobed leaflets. The wild type accession is highly resistant to drought, disease and insect pests according to the farmer. He said that this is the only legume variety that can be cultivated in this dry zone. This bean is preferred by local consumers and therefore has a higher selling price compared with mungbean seeds (Rs 3000/100 kg for moth bean and Rs 2000 /100 kg for mungbean). He also said that this dry area is occasionally affected by flooding and moth bean is also tolerant to flooding. Moth bean drops its leaves in flooding conditions. However, its stems survive under the flooding condition, and they can produce new leaves when flooding stops. This wild variety is used mainly as a fodder. It is cultivated with sorghum at this

site. The sorghum variety cultivated here is also used for fodder production.

#### **Black gram (*Vigna mungo*)**

Black gram is especially important in Tamil Nadu State and its production is more than that of mungbean. A black gram accession collected (TN4) was grown between banana plants. This banana field was irrigated by using pumped water from a tank. A black gram cultivar collected (TN29) was bred at National Pulses Research Centre, Vamban. This cultivar was bred based on a cross between cultivated and wild black gram. Wild black gram (*V. mungo* var. *silvestris*) is reported to be distributed in Tamil Nadu, but we could not find natural population of this species. We have collected one accession of wild black gram (TN30) conserved at National Pulses Research Centre.

#### **Mungbean (*V. radiata*)**

The center of mungbean genepool diversity is considered to be in India (Sangiri et al., 2007). However, the number of available accessions for wild mungbean germplasm is still limited. An accession of mungbean (TN1) was collected at a farmer's field north of Coimbatore, which was cultivated in monoculture and exhibited symptoms of powdery mildew and yellow mosaic virus. One accession of wild mungbean (*V. radiata* var. *sublobata*, TN10) was collected beside paddy fields near Palakkad town in Kerala State. Plants in this population have about 4 cm pods in length and they contain about 9 seeds per pod.

#### ***Vigna stipulacea* (cultivated type and wild type)**

Two accessions (TN24 and TN29) of cultivated type of *Vigna stipulacea* were collected. A farmer (Mr. Dharmaraj) growing cultivated type of *V. stipulacea* (TN24) in his paddy field told that cultivated type called "Nari payaru (Fox pulse)" had pods with lower shattering, and had slightly larger seeds compared with wild type of *V. stipulacea*. Therefore he can harvest the plants by cutting their stems using knife, then sun dry the plants and husking the seeds by driving a farm tractor on the sun dried plants. He also mentioned that he recognized no serious diseases and pests on this crop. He said this crop can be planted any time of a year probably suggesting no or low photoperiod sensitivity. He uses this crop either for seed production (75-80 days), as a green manure (45 days) or as a cover crop of banana plantation. When he uses this crop as a cover crop, he first grows this legume, then after establishment and covering the soil surface (about 45 days later), he plants banana shoots. Answering the question about storage pests (bruchids), he said he used dry chilli powder mixed with seeds to prevent serious damage by bruchids. Based on the observation of the morphology of cultivated type of *V. stipulacea* (TN29) grown at National Pulses Research Centre, the plants have larger leaflets and thicker main stems compared with wild *V. stipulacea* plants (TN19) observed at their natural habitat. They are growing abundantly in a fallow paddy fields with clay soil.

#### ***Vigna trilobata***

An accession of *V. trilobata* (TN25) was found at a site beside road and around a paddy field. The site is about 8 km N of Pudukkottai town. The plants have white marks at the base of leaflets. Variation was observed among individuals in a population regarding the lobe depth of leaflets. The roots of plants were severely infested by the nematodes.

#### ***Vigna hainiana***

An accession of *V. hainiana* (TN32) was conserved at the National Pulses Research Centre.

Based on the literatures and image morphology of the type specimen (originally named as *Phaseolus wightii* Wight and Arn.), Tomooka et al. (2006) considered that *V. hainiana* is conspecific with *V. subramaniana* and should be treated as a synonym of *V. subramaniana*. The taxonomic treatment of this accession (TN32) will be studied further in this collaborative project.

### *Vigna vexillata*

Three accessions of *V. vexillata* (TN5, 7, 9) were collected in the Nilgiris Hills. This species seems to be common in this area. The altitude of collection sites ranged from 908 to 1062 m. According to a farmer at collection site (TN5), seeds of this plants were collected and used as an ingredient of “Sambar (curry)” when he was a child. They were found growing at wet habitat such as beside paddy fields or near a stream.

### References

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- Tomooka N., Vaughan D.A., Maxted N. and H. Moss. 2002. The Asian *Vigna*. Genus *Vigna* subgenus *Ceratotropis* genetic resources. 270 pages. Kluwer Academic Press.
- Tomooka, N., Kaga, A., and Vaughan D.A. 2006. The Asian *Vigna* (*Vigna* subgenus *Ceratotropis*) biodiversity and evolution. *In* Plant Genome - Biodiversity and Evolution. Edited by Sharma A.K. and Sharma A. Science Publishers. Enfield (NH). pp. 87-126.

### 和文摘要

本報告は、独立行政法人農業生物資源研究所ジーンバンクとインド、タミルナドゥ農業大学の間で2007年4月に締結した協同研究協定(MOU)に基づいて行われたインド、タミルナドゥ州における植物遺伝資源の調査報告である。調査は、2008年3月1日～16日にかけて行った。調査の結果、在来作物の栽培は著しく減少しつつあることが明らかになったが、乾燥が厳しい地域で現地農民がモスビーンの野生型(匍匐性で茎が長く伸び、葉の切れ込みが大きく耐乾性が強いという)とされている系統の栽培や、やや栽培化が進んだ状態(種子がやや大型化し、裂莢性が低下しているという)と思われる *Vigna stipulacea* の多目的栽培(食用種子生産、飼料生産、被覆作物)など、興味深い特性を持つと考えられる遺伝資源も残存していた。*Vigna* (ササゲ)属野生植物遺伝資源に関しても、高い多様性の収集が期待できる地域である。また、*Lablab* (フジマメ)属の野生種も豊富であることが今回の調査で明らかになった。

菜食主義者が多いインドにおいては、マメ科作物はタンパク供給源として重要な位置を占めており、なかでも *Vigna* 属作物(ケツルアズキとリョクトウ)の安定的な生産と品種改良等による収量増に関する研究には高い優先順位をつけて研究を推進している。協同研究の相手であるタミルナドゥ農業大学においても、ケツルアズキとリョクトウの育種、栽培、分子遺伝学的解析などの課題に多くの研究者が取り組んでいた。今後の共同研究による大きな成果が期待できる。

Table 2. A summary of collected species

収集品のまとめ

和名 (学名)	Japanese name (Scientific name)	系統数	No.
<b>栽培種</b>	<b>Cultivated species</b>		<b>17</b>
	フジマメ ( <i>Lablab purpureus</i> )		4
	ホースGRAM ( <i>Macrotyloma uniflorum</i> )		1
	インゲンマメ ( <i>Phaseolus vulgaris</i> )		2
	ライマメ：逸出自生集団 ( <i>Phaseolus lunatus</i> )		1
	モスビーン ( <i>Vigna aconitifolia</i> )		2
	ケツルアズキ ( <i>Vigna mungo</i> )		1
	リョクトウ ( <i>Vigna radiata</i> )		1
	リョクトウ近縁種：栽培型 ( <i>Vigna stipulacea</i> )		2
	ササゲ ( <i>Vigna unguiculata</i> )		3
<b>野生種</b>	<b>Wild species</b>		<b>12</b>
	フジマメ近縁野生種 ( <i>Lablab</i> sp.)		3
	リョクトウ近縁野生種 ( <i>Vigna hainiana</i> )		1
	ケツルアズキ野生種 ( <i>Vigna mungo</i> var. <i>silvestris</i> )		1
	リョクトウ野生種 ( <i>Vigna radiata</i> var. <i>sublobata</i> )		1
	リョクトウ近縁野生種 ( <i>Vigna stipulacea</i> )		1
	リョクトウ近縁野生種 ( <i>Vigna trilobata</i> )		1
	アカササゲ ( <i>Vigna vexillata</i> )		3
	未同定マメ科植物 (unidentified wild legume species)		1
<b>栽培種と野生種合計</b>	<b>Total (Cultivated + Wild)</b>		<b>29</b>

Table 3. A passport data of collected materials, Tamil Nadu, India, 2008 収集品のパスポートデータ

Col. No.	Date	Species	Status	Collection Site	Province	Latitude
2008TN1	3-Mar	<i>Vigna radiata</i>	cultivated	In a farmer's field, Muggalappalayam vill., ca. 10km SW of Mettupalayam	Coimbatore	N11-11-55.0
2008TN2	3-Mar	<i>Lablab purpureus</i>	cultivated	In a farmer's field, Muggalappalayam vill., ca. 10km SW of Mettupalayam	Coimbatore	N11-11-55.0
2008TN3	3-Mar	<i>Vigna unguiculata</i>	cultivated	In a farmer's field, Muggalappalayam vill., ca. 10km SW of Mettupalayam	Coimbatore	N11-11-55.0
2008TN4	3-Mar	<i>Vigna mungo</i>	cultivated	In a farmer's field, Muggalappalayam vill., ca. 10km SW of Mettupalayam	Coimbatore	N11-11-55.0
2008TN5	4-Mar	<i>Vigna vexillata</i>	wild	Climbing on the fence of village path. Kurumbampadi vill., ca. 15km W of Gudalur.	Nilgiris	N11-33-19.7
2008TN6	4-Mar	<i>Vigna unguiculata</i>	cultivated	Makkoor vill., ca. 2km W of Gudalur	Nilgiris	N11-31-30.0
2008TN7	4-Mar	<i>Vigna vexillata</i>	wild	Makkoor vill., ca. 2km W of Gudalur	Nilgiris	N11-31-30.1
2008TN8	5-Mar	<i>Phaseolus lunatus</i>	escape	Forage land ca. 1km N of Gudalur	Nilgiris	N11-30-25.8
2008TN9	5-Mar	<i>Vigna vexillata</i>	wild	Forage land ca. 1km N of Gudalur	Nilgiris	N11-30-22.9
2008TN10	6-Mar	<i>Vigna radiata</i> var. <i>sublobata</i>	wild	Beside paddy fields, Kerangra Pulli Vill., ca. 2km S of Palakkad	Kerala State	N10-45-07.1
2008TN11	7-Mar	wild leguminous plant	wild	Road side, S of Palani town, on the way to climbing Palani hills	Dindigul	N10-21-42.4
2008TN12	7-Mar	wild leguminous plant	wild	road side, S of Palani town, on the way to climbing Palani hills	Dindigul	N10-21-42.4
2008TN13	8-Mar	<i>Phaseolus vulgaris</i>	cultivated	Vashakattaodai, Palani hills	Dindigul	N10-16-09.7
2008TN14	8-Mar	<i>Phaseolus vulgaris</i>	cultivated	Vashakattaodai, Palani hills	Dindigul	N10-16-09.7
2008TN15	8-Mar	<i>Lablab purpureus</i>	cultivated	Vashakattaodai, Palani hills	Dindigul	N10-16-09.7
2008TN16	8-Mar	<i>Lablab</i> sp.	wild	Vashakattaodai, Palani hills	Dindigul	N10-16-09.7
2008TN17	8-Mar	<i>Lablab</i> sp.	wild	Vashakattaodai, Palani hills	Dindigul	N10-16-09.7
2008TN18	9-Mar	<i>Lablab purpureus</i>	cultivated	5km E of Periyakulam	Teni	N10-07-46.5
2008TN19	9-Mar	<i>Vigna stipulacea</i>	wild	Kodahgipatty	Teni	N09-59-51.7
2008TN20	9-Mar	<i>Lablab purpureus</i>	cultivated	Dharmathupatty, Boli	Teni	N09-57-21.7
2008TN21	9-Mar	<i>Vigna unguiculata</i>	cultivated	Teni	Teni	N09-51-39.8
2008TN22	9-Mar	<i>Lablab</i> sp.	wild	Teni	Teni	N09-51-15.9
2008TN23	9-Mar	<i>Vigna aconitifolia</i>	cultivated	Karur	Karur	N10-51-51.9
2008TN24	9-Mar	<i>Vigna stipulacea</i>	cultivated	Koppu vill., 8km W of Trichi	Karur	N10-50-43.5



Longitude	Alt. (m)	Seed	Herbarium	Nodule	Remarks
E76-55-22.2	380	yes	no	no	Local name: Pachai Pairu. Powderly mildew and Yellow Mosaic Virus observed. At first this farmer bought government seeds. At maturity stage. 6.5 cm pod with 11 seeds inside. Shiny green seeds.
E76-55-22.2	380	yes	no	no	Local name: Avarai. Already harvested. Use young pods for vegetables. Crop season: Jun/July -- November/December. Black seeds.
E76-55-22.2	380	no	no	no	Local name: Thatta Pairu. Young pods for vegetables. No mature pods available. Pod length about 30 cm.
E76-55-22.2	380	no	no	no	Local name: Ulandu Parupu. Inter-cropped between banana plants in a field with pump irrigation.
E76-24-46.8	1062	yes	yes	no	Local name: Awari. Ca. 15cm pod with 17seeds. Black seeds. Brown pod. Seeds were collected and used in the former time as an ingredient of "Sambar (curry)". Black seeds.
E76-27-47.0	935	yes	no	no	Yard long bean (cultivar group Sesquipedalis). They started cultivation recently. Bought seeds at local market. Brown seeds.
E76-27-46.4	931	yes	yes	no	Beside paddy field. 14 ~ 15 cm pod with 16 seeds. Flowering & maturing stage. Black mottled seeds. They say they do not eat.
E76-29-38.5	900	yes	no	no	Grow naturally beside road. Rather wet depression site used for pasture. Rather small dark reddish black seeds. Pod not shattering.
E76-29-41.4	908	yes	no	no	In a bush beside tea plantation near stream. Ca. 13 cm pod with 16-17 seeds. Vigorous growth.
E76-40-41.5	82	yes	yes	no	Paddy harvesting on-going (Most of paddy area already harvested). Ca. 4 cm pod with 9 seeds, stem less hairy. Clay soil.
E77-31-37.8	589	no	no	no	Wet site beside road.
E77-31-37.8	589	yes	no	no	Wet site beside road.
E77-28-08.3	1735	yes	no	no	Farmer's field. Red seeded variety locally called "Pavala beans".
E77-28-08.3	1735	yes	no	no	Farmer's field. Pale brown seeded variety locally called "Kakki murungai".
E77-28-08.3	1735	yes	no	no	In front of farmer's house. As vegetables. Purple flower. Black seeds.
E77-28-08.3	1735	yes	no	no	In a tea garden. Purple and white flower individuals mixed. Pod shattering type.
E77-28-08.3	1735	yes	no	no	In a tea garden.
E77-34-48.7	297	yes	no	no	Farmer's field. Cultivar name : CO1, Stink bugs attacking young pods.
E77-24-21.5	325	yes	yes	yes	In a fallow paddy field. Identified as a large stipule type of <i>V. trilobata</i> in Indian taxonomic system. Silty clay soil. PH8.5.
E77-20-16.8	365	yes	no	no	Between Kapok trees. Whitish seeded type. Stems used for fodder. Young pods used as a vegetable (boiled with sugar).
E77-21-15.6	376	yes	no	no	Inter-cropped with Sesbania crop. As vegetables.
E77-21-31.6	361	yes	yes	no	On the fence beside road.
E78-23-47.5	98	yes	yes	no	Farmer called this accession as a wild type (deeply lobed leaflets, long trailing stems, highly resistant to drought, diseases, insects). Grown mixed with fodder sorghum. Local name: "Nari Payaru (fox bean)" or "Pani Payaru (dew bean)". Crop season: Jun/Jul - Jan/Feb. Good for cow milk production.
E78-33-54.3	75	yes	yes	no	Cultivated type (low pod shattering). Can grow any time of the year. Seeds for 75-80 days, green maure/ cover crop for 45 days. Locally called "Nari Payaru (fox bean)". Identified as a large stipule type of <i>V. trilobata</i> in Indian taxonomic system. Farmer's name: Mr. Dharmaraj.

Table 3 (continued).

Col. No.	Date	Species	Status	Collection Site	Province	Latitude
2008TN25	10-Mar	<i>Vigna trilobata</i>	wild	8km N of Pudukkottai, S of Keeranor twon	Pudukkottai	N10-32-27.9
2008TN26	10-Mar	<i>Vigna aconitifolia</i>	cultivated	Chennakarai, near Mukkombu	Tiruchirappalli	N10-54-23.0
2008TN27	10-Mar	<i>Macrotyloma uniflorum</i>	cultivated	Chennakarai, near Mukkombu	Tiruchirappalli	N10-54-23.0
2008TN28	10-Mar	<i>Vigna unguiculata</i>	cultivated	Chennakarai, near Mukkombu	Tiruchirappalli	N10-54-23.0
2008TN29	10-Mar	<i>Vigna stipulacea</i>	cultivated	Vamban, Colony	Pudukkottai	N10-21-50.8
2008TN30	10-Mar	<i>Vigna mungo</i> var. <i>silvestris</i>	wild	Vamban, Colony	Pudukkottai	N10-21-50.8
2008TN31	10-Mar	<i>Vigna mungo</i>	cultivated	Vamban, Colony	Pudukkottai	N10-21-50.8
2008TN32	10-Mar	<i>Vigna hainiana</i>	wild	Vamban, Colony	Pudukkottai	N10-21-50.8

Longitude	Alt. (m)	Seed	Herbarium	Nodule	Remarks
E78-46-39.9	112	yes	yes	yes	Grow beside paddy field and also road side. Entire and lobed leaflet observed in a population. White marks are prominent of leaflets. Identified as small stipule type of <i>V. trilobata</i> in Indian taxonomic system.
E78-35-09.9	87	yes	no	no	Farmer said wild type called "Pani Payaru (dew bean)". Highly resistant to diseases and pests. Farmer told that poder of <i>Vigna aconitifolia</i> is the most delicious for "Dosai" and "Idli" preparation. Farmmer's name: Mr. Anbuchellian
E78-35-09.9	87	yes	no	no	Local name: "Kollu". Crop season: Oct/Nov - mid Feb. Photosensitive. Usually cultivated in monoculture.
E78-35-09.9	87	yes	no	no	Used for dhal. Local name: "Thatai Payaru". Usually cultivated under mixed cropping system.
E78-54-05.9	109	yes	no	no	Conserved at National Pulses Research Centre, so called cultivated type.
E78-54-05.9	109	yes	no	no	Conserved at National Pulses Research Centre as <i>V. mungo</i> var. <i>silvestris</i> No. 2. Large seed size similar to cultivar. Black mottled seeds
E78-54-05.9	109	yes	no	no	Cultivar derived from <i>V. mungo</i> x <i>V. mungo</i> var. <i>silvestris</i> cross at National Pulses Research Centre. Shiny green seeds.
E78-54-05.9	109	yes	no	no	Conserved at National Pulses Research Centre. Pod 5.5 cm, glabrous, 14 seeds/pod.



Photo 1. A field of black gram (*Vigna mungo*) TN4, inter-cropped with banana plants, N of Coimbatore. Field is irrigated with water from well.



Photo 2. *Vigna vexillata* (TN5) found on Nilgiri Hills. According to a farmer, seeds of this wild plant were used as an ingredient of curry before.



Photo 3. Wild or escaped *Lablab* plants (TN16) growing in a tea garden at Palani Hills. The plants have easy shattering pods.



Photo 4. A wild type of moth bean (*Vigna aconitifolia*, TN23) grown in Karur province. Only this bean can be grown at this dry zone.



Photo 5. Plants of *Vigna trilobata* (TN25) growing north of Pudukkottai town. Variation was observed for the leaflet morphology (lobed & entire).



Photo 6. Cultivated type of *Vigna stipulacea* conserved at National Pulses Research Centre. *V. stipulacea* is identified as *V. trilobata* in India



Photo 7. A plant of *Vigna radiata* var. *sublobata* (TN10) growing beside paddy near Palakkad, Kerala State.



Photo 8. Idli (fermented white pan cake made from rice and *V. mungo* powder) and Wada (*Vigna* fried cake) with pigeon pea curry (upper middle) is a popular breakfast in Tamil Nadu.