

INDIGENOUS RICE VARIETIES

S. Arumugasamy, N. Jayashankar, K. Subramanian
Subhashini Sridhar, K. Vijayalakshmi

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Chennai
January 2001

K. Vijayalakshmi

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For Dharampalji

INTRODUCTION

Diversity of Rice Crop

India is the home of one of the greatest diversities of both wild and cultivated crops. However in recent years there has been a marked decline in the variety and diversity of cultivated crops such as rice and cereals. Rapid changes brought about in the technological sphere have been largely responsible for this decline. With the advent of green revolution, the emphasis has been to a large extent on the increase of yield; consequently a small number of rice varieties selected for their capacity to give high yields in response to the application of high doses of fertilisers are being promoted. As a result, today the genetic base has narrowed down considerably.

According to Dr. Richaria the well known rice scientist 4,00,000 varieties of rice existed in India during the vedic period. He estimates that, even today 2,00,000 varieties of rice exist in India - a truly phenomenal number. This means that even if a person were to eat a new rice variety every day of the year he would live for over five hundred years without reusing a variety. Every variety has a specific purpose and utility. Dr. Richaria has collected and identified 20,000 types of rice in the Chattisgarh area of Madhya Pradesh alone.

Farmers in every part of country have deep knowledge of their own rice varieties, of their environmental and nutritional requirements and their properties and peculiarities. This has enabled them to harvest a crop even under the most severe stress situations. Farmers also possess high yielding varieties of their own which are not recognised in agricultural extension programmes.

The alarming rate of ecological and biodiversity destruction has now been recognised and the need for conservation is acknowledged at the level of farmers and the state. There are a number of reasons for enlarging the diversity of cultivated crops such as rice and in this effort various indigenous varieties used by farmers have a key role to play.

Characteristics of Indigenous Rice Varieties

There are many reasons as to why indigenous varieties are still conserved inspite of all odds. High yielding varieties are not suited to all farming conditions and there are situations where indigenous varieties are better suited. For example, in the alkaline soils of Tamilnadu an indigenous variety of paddy called - "Kalarpalai" alone can be cultivated. Varieties like Vadan samba are highly drought resistant. Most indigenous varieties are resistant to pests and they are less vulnerable and more hardy. Indigenous varieties require less farm inputs (such as chemical fertilisers and pesticides) and they yield straw which is valuable to farmers as cattle feed as well as roofing material. Many varieties fulfill specific nutritional and other dietary needs. Besides this, indigenous varieties provide the basic genetic material for developing any other variety in future.

Farmers Seed banks for Indigenous Rice Conservation

Though indigenous rice varieties are still preserved by a few farmers they are getting depleted at an alarming rate. Several groups across the country are trying to preserve these varieties through on farm conservation. Our centre has been involved in setting up farmers seed banks in villages in different parts of Tamil Nadu. Our field workers have travelled to

villages in various parts of Tamil Nadu and have collected these varieties. Farmers seed banks have been set up in Chengam and Vandavasi in the Tiruvannamalai district, Nedumbaram in the Tiruttani district and Manampathy, Tiruporur and Kattankalathur in the Kancheepuram district. More than 300 farmers spread in 20 villages of the Kattankalathur block are currently involved in conserving indigenous rice varieties. In addition these rice varieties are also grown in our experimental farm.

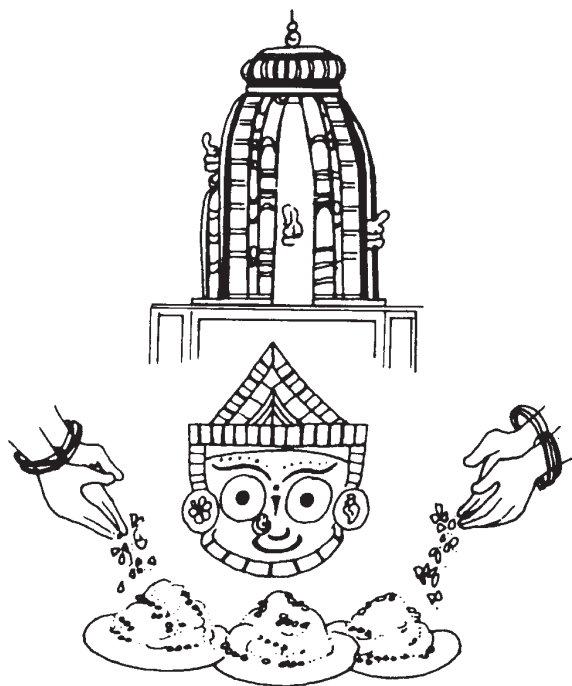
We have been compiling detailed information for each variety at different stages of growth of the rice crop. This compilation is done both in our experimental farm and also in farmers' fields. In this book information regarding 34 indigenous rice varieties have been given. We hope to bring more volumes both on rice and other crops.

We request those farmers who require seeds to get in touch with us. We also request farmers who are cultivating any of the indigenous varieties mentioned in this book or other such varieties to share their experiences with us. We seek your cooperation to conserve indigenous agriculture and crop diversity. We hope that this book will help those interested in cultivating and conserving indigenous rice varieties.



Rice Varieties at the Temple of Lord Jagannath

At the Puri temple in Orissa Lord Jagannath is worshipped with food prepared from freshly harvested rice every day! This traditional system has been propagated based on the intimate knowledge of the rice varieties then prevalent in ancient India, followed by the varietal choice. Such a concept of ancient days, may guide us to a possibility to harvest rice every day and every where. Such a system might have been a common practice in the past which was abandoned gradually with the introduction of the modern practices. This concept of ancient days may be revived and a possibility to harvest rice every day and every where may be explored.



INDIGENOUS RICE VARIETIES

This book provides detailed information on 34 indigenous rice varieties. For each variety the cultivation details, agronomical features, characteristics of the earhead and the grains, yields of grain and straw are given. It also provides information on certain special features of the variety. All the information provided in this book is based upon our own experience of the cultivation of these varieties under field conditions. The information provided for each variety is based on cultivating this variety by the transplantation method. However, if a variety can be cultivated only by dry sowing or wet sowing method information provided is based on that particular cultivation method.

Seasons

1. Sornavari : April 15 - August 14
(Tamil months : Chithirai - Adi)
2. Samba : July 15 - January 14
(Tamil months : Adi - Margazhi)
3. Late samba : September 15 - February 14
(Tamil months : Puratassi - Thai)
4. Navarai : December 15 - March 14
(Tamil months : Margazhi - Masi)

Seed Rate

30 kg. of seeds per acre are required for dry sowing and wet sowing. For cultivation by transplantation method 40 - 42 kg. of seeds are required for preparing the nursery.

Yield

The yield of grains and straw is given in bags and bundles. One bag is 75 kilos and one bundle is 30 kilos.

THANGA SAMBA

Cultivation Aspects

Season	: Samba, Late samba
Cultivation method	: Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 160 - 165 days
Nursery age	: 40 days
Height of crop (cm.)	
a) Average	: 122.2
b) Maximum	: 140.6
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 23.8
b) Maximum	: 24.9
Number of grains per earhead	
a) Average	: 176
b) Maximum	: 186

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage and the milky stage and on maturity turns golden in colour.
Weight of 1000 grains	: 18.216 grams
Colour of rice	: White

Rice quality : Fine

Yield (per Acre)

Grains	: 20 bags (1500 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. The earhead of this variety is very long.
2. Since this variety of rice is extremely fine and long it is used for the preparation of special dishes like pulav. It is suitable for the South Indian meal.
3. The word 'Thangam' in Tamil means 'Gold'. Since the matured grains are golden in colour the variety is known as 'Thanga Samba'.



In-situ conservation in the experimental farm

NEELAN SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Clayey

Agronomical Features

Crop duration	: 175 - 180 days
Nursery age	: 45 - 50 days
Height of crop (cm.)	
a) Average	: 132.0
b) Maximum	: 141.5
Lodging/Non-lodging	: Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 24.9
b) Maximum	: 27.5

Number of grains per earhead

a) Average	: 185
b) Maximum	: 191

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, black in the milky stage and on maturity it is seen with a mixture of black and yellow colours.
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Weight of 1000 grains	: 24.899 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 20 bags (1500 kg.)
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Straw	: 60 bundles (1800 kg.)
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Special Features of the Variety

1. A highly suitable variety for areas which are prone to water logging. It is best suited for cultivation in the vicinity of lakes.
2. Resistant to brown plant hopper and earhead bug.
3. It increases the milk yield in lactating mothers and hence suitable for them.
4. Since the straw is very long it is used as a roofing material.

KAPPA SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 160 - 165 days
Nursery age	: 40 days
Height of crop (cm.)	
a) Average	: 121.6
b) Maximum	: 131.1
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.2
b) Maximum	: 22.0
Number of grains per earhead	
a) Average	: 147
b) Maximum	: 170

Characteristics of the Grain

Colour of the grain	: It is green during the flowering stage, green with black stripes in the milky stage and on maturity turns yellow in colour.
Weight of 1000 grains	: 23.878 grams
Colour of rice	: Red

Rice quality : Coarse

Yield (per Acre)

Grains	: 20 bags (1500 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. It is highly suitable for preparing the traditional South Indian delicacies such as the idly and dosa.
2. During the flowering stage there is a needle like awn at the tip of all grains. However, on maturity some of them drop off.
3. Highly resistant to pest and disease.



Conservators of indigenous varieties

VADAN SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 155 - 160 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 97.7
b) Maximum	: 105.4
Lodging/Non-lodging	: Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 17.9
b) Maximum	: 20.1

Number of grains per earhead

a) Average	: 139
b) Maximum	: 162

Characteristics of the Grain

Colour of the grain : It is green during the flowering stage, dark green in the milky stage and on maturity turns straw coloured.

Weight of 1000 grains : 26.899 grams

Colour of rice : Dullish white

Rice quality : Coarse

Yield (per Acre)

Grains : 15 bags (1125 kg.)

Straw : 40 bundles (1200 kg.)

Special Features of the Variety

1. It is highly suitable for preparing the traditional South Indian delicacies such as the idly and dosa.
2. Since the grains shatter, it is important to harvest them when they are still green.
3. Highly resistant to pest and disease.
4. It is also a highly drought resistant variety.

KUDIRAIVAL SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey

Agronomical Features

Crop duration	: 165 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 103.5
b) Maximum	: 110.0
Lodging/Non-lodging	: Medium Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 23.4
b) Maximum	: 25.2
Number of grains per earhead	
a) Average	: 15.3
b) Maximum	: 18.3

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow and found with long black stripes.
Weight of 1000 grains	: 22.093 grams
Colour of rice	: White

Rice quality	: In between coarse and fine (moderate)
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Yield (per Acre)

Grains	: 20 bags (1500 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. It is better to grow this variety by transplantation.
2. The rice is suitable for the South Indian meal.
3. Can be grown in areas prone to water logging.
4. Highly resistant to pest and disease.



KALIAN SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 155 - 160 days
Nursery age	: 40 days
Height of crop (cm.)	
a) Average	: 124
b) Maximum	: 157
Lodging/Non-lodging	: Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 22.4
b) Maximum	: 24.6

Number of grains per earhead

a) Average	: 145
b) Maximum	: 167

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow in colour.
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Weight of 1000 grains	: 29.468 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 16 bags (1200 kg.)
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Straw	: 53 bundles (1600 kg.)
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Special Features of the Variety

1. It grows very tall to a height of 167 cm.
2. Extremely suitable for making idli and dosa.
3. It can be grown in areas prone to water logging and low lying areas.
4. Highly resistant to pest and disease.

KURANGU SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 150 days
Nursery age	: 35 - 40 days
Height of crop (cm.)	
a) Average	: 135.7
b) Maximum	: 149.6
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 28.0
b) Maximum	: 28.9
Number of grains per earhead	
a) Average	: 208
b) Maximum	: 267

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity becomes straw coloured.
Weight of 1000 grains	: 19.161 grams
Colour of rice	: White

Rice quality : Fine

Yield (per Acre)

Grains	: 23 bags (1725 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. The earheads are very long.
2. There are upto 267 grains in one earhead.
3. The rice of this variety is suitable for the South Indian meal.
4. It grows in areas prone to water logging as well as dry areas.
5. Highly resistant to pest and disease.



Seedlings being plucked in the experimental farm
(Mr. E. Damodaran)

SEERAGA SAMBA

Cultivation Aspects

Season	: Samba, Navarai
Cultivation method	: Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 125 - 130 days
Nursery age	: 30 - 35 days
Height of crop (cm.)	
a) Average	: 80.5
b) Maximum	: 93.2
Lodging/Non-lodging	: Lodging



Mrs. Kanaga in the Seeraga samba field

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 21.9
b) Maximum	: 23.5

Number of grains per earhead

a) Average	: 162
b) Maximum	: 186

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity it becomes straw coloured.
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Weight of 1000 grains	: -
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Colour of rice	: White, Aromatic
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Rice quality	: Extremely fine
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Yield (per Acre)

Grains	: 20 bags (1500 kg.)
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Straw	: 35 bundles (1050 kg.)
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Special Features of the Variety

1. Since the rice of this variety resembles the shape of a spice "Seeragam" it has got the name "Seeraga Samba".
2. The rice is extremely fine and aromatic, hence it is used for making 'Biriyani'.
3. There should be no water logging in the area where it is cultivated.
4. Though the yield is very low, since it is aromatic, it fetches the highest price amongst all indigenous paddy varieties of Tamil Nadu.

SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey

Agronomical Features

Crop duration	: 160 - 165 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 105
b) Maximum	: 117
Lodging/Non-lodging	: Medium Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 23
b) Maximum	: 28
Number of grains per earhead	
a) Average	: 140
b) Maximum	: 150

Characteristics of the Grain

Colour of the grain	: It is dark green during the flowering stage, dark green in the milky stage and on maturity turns yellow in colour.
Weight of 1000 grains	: 24.651 grams
Colour of rice	: White

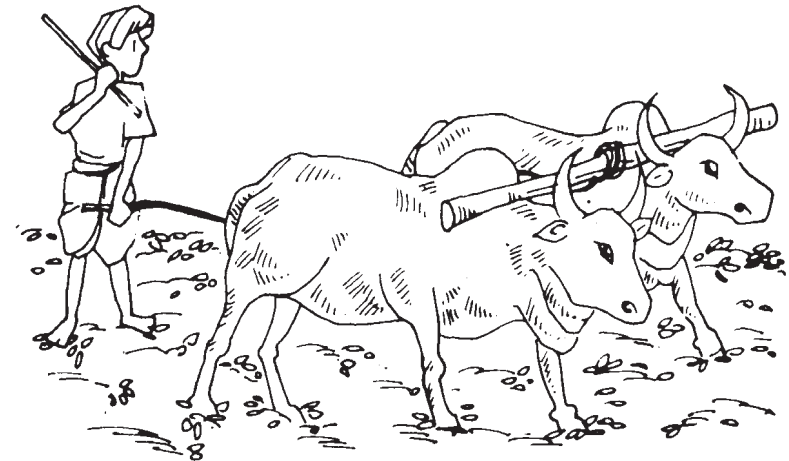
Rice quality : Coarse

Yield (per Acre)

Grains	: 22 bags (1650 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. This variety is highly suitable for making idly and dosa. It is also suitable for the South Indian meal.
2. It can be grown in areas prone to water logging and also in saline soils.
3. Highly resistant to pest and disease.



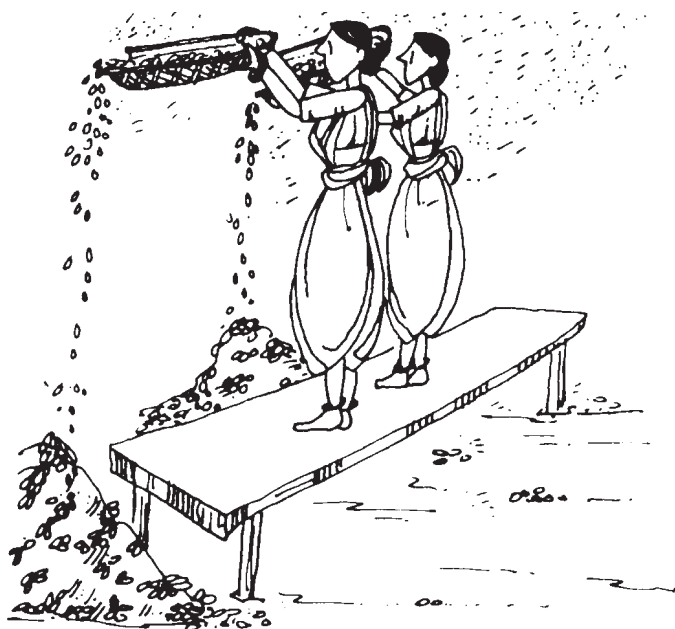
SAMBA MOSANAM

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey soil

Agronomical Features

Crop duration	: 160 - 165 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 134.2
b) Maximum	: 150.2
Lodging/Non-lodging	: Lodging



Characteristics of Earhead

Length of the earhead (cm)	
a) Average	: 25.7
b) Maximum	: 26.3

Number of grains per earhead	
a) Average	: 162
b) Maximum	: 213

Characteristics of Grains

Colour of the grain	: It is light green during the flowering stage, black with long green stripes during the milky stage and turns a straw colour on maturity.
Weight of 1000 grains	: 28.677 grams
Colour of rice	: Red
Rice quality	: Coarse

Yield (per Acre)

Grains	: 24 bags (188 kg.)
Straw	: 65 bundles (1950 kg.)

Special Features of the Variety

1. This variety is also called Puzudikal, Eri nel and Maduvu muzangi. It is suitable for growing in the vicinity of lakes. It is said that people travelled by boats and harvested the 'Samba mosanam' in the lakes.
2. The variety is good for preparing aval. (flattened rice), idly and dosa.

KITCHILI SAMBA

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 135 - 140 days
Nursery age	: 30 - 35 days
Height of crop (cm.)	
a) Average	: 102.2
b) Maximum	: 118.6
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.7
b) Maximum	: 22.8
Number of grains per earhead	
a) Average	: 96
b) Maximum	: 131

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity becomes straw coloured.
Weight of 1000 grains	: 17.005 grams
Colour of rice	: White

Rice quality	: Fine
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Yield (per Acre)

Grains	: 15 bags (1125 kg.)
Straw	: 35 bundles (1050 kg.)

Special Features of the Variety

1. This variety is highly suitable for the South Indian meal and also used for making a special dish called 'biryani'.
2. This variety is highly suitable for dry sowing.
3. Highly resistant to pest and disease.



Mr. Kannan and Mr. Arumugasamy in the Kitchili samba field

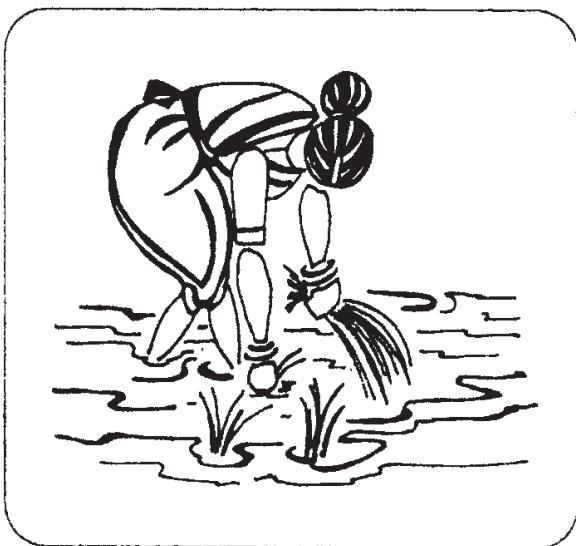
MUTTAKAR

Cultivation Aspects

Season	: Navarai
Cultivation method	: Wet sown, Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 120 days
Nursery age	: 30 days
Height of crop (cm.)	
a) Average	: 135.4
b) Maximum	: 100.6
Lodging/Non-lodging	: It starts lodging soon after the milky stage. However this does not affect the crop yield.



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 19.25
b) Maximum	: 25.8

Number of grains per earhead

a) Average	: 80
b) Maximum	: 100

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns straw coloured.
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Weight of 1000 grains	: 22.025 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18 bags (1350 kg.)
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Straw	: 40 bundles (1200 kg.)
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Special Features of the Variety

1. It is highly suitable for preparing the traditional South Indian delicacies such as the idly and dosa.
2. Highly resistant to pest and disease.

KULLAKAR

Cultivation Aspects

Season	: Sornavari, Navarai
Cultivation method	: Dry sown, Wet sown, Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 100 - 110 days
Nursery age	: 21 days
Height of crop (cm.)	
a) Average	: 87
b) Maximum	: 100
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 20
b) Maximum	: 23
Number of grains per earhead	
a) Average	: 60
b) Maximum	: 105

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns a light straw coloured.
Weight of 1000 grains	: 28.000 grams
Colour of rice	: Red

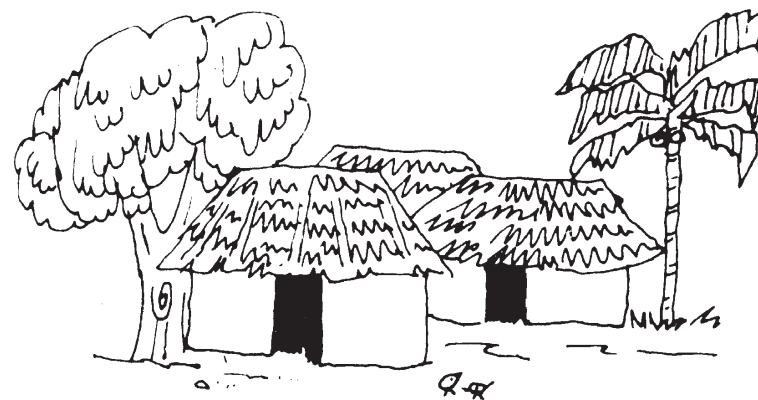
Rice quality : Coarse

Yield (per Acre)

Grains	: 20 bags (1500 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. This variety is highly suitable for preparing the idly and dosa. It is also used in the preparation of porridge.
2. Since it is a short duration variety it can be grown in all the three seasons.
3. Highly drought resistant. However, there should be no water logging.
4. Highly resistant to pest and disease.
5. The straw is preferred as a roofing material.



KAPPAKAR

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey

Agronomical Features

Crop duration	: 150 - 160 days
Nursery age	: 40 days
Height of crop (cm.)	
a) Average	: 123
b) Maximum	: 130
Lodging/Non-lodging	: Medium Lodging



Mr. Jayapal in the Kappakar field

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 21
b) Maximum	: 24

Number of grains per earhead

a) Average	: 162
b) Maximum	: 240

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, black with green stripes in the milky stage and on maturity turns dark brown in colour.
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Weight of 1000 grains	: 26.811 grams
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Colour of rice	: Brown
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18 bags (1350 kg.)
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Straw	: 60 bundles (1800 kg.)
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Special Features of the Variety

1. This variety is highly suitable for making idly and dosa.
2. Gives a high yield in clayey soil.
3. Suitable for growing in water logging areas as well as drought prone areas.
4. Suitable for preparing Aval (flattened rice).
5. This variety is used in the feast given during several rituals like "Seemantham" (a ritual conducted during pregnancy).

PERUNGAR

Cultivation Aspects

Season	: Navarai
Cultivation method	: Transplantation
Soil type	: Clayey

Agronomical Features

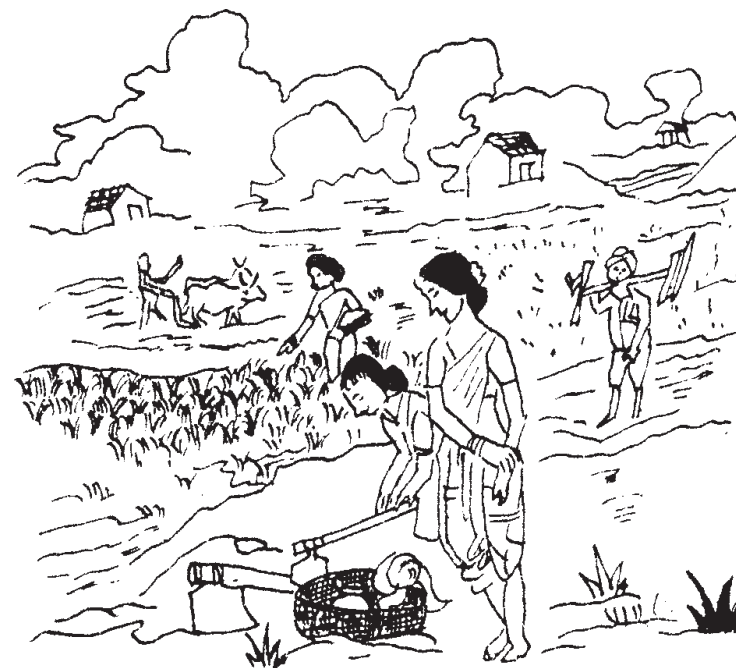
Crop duration	: 130 days
Nursery age	: 30 - 35 days
Height of crop (cm.)	
a) Average	: 124.6
b) Maximum	: 131.1
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.2
b) Maximum	: 23.7
Number of grains per earhead	
a) Average	: 104
b) Maximum	: 122

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow.
Weight of 1000 grains	: 23.642 grams
Colour of rice	: Red
Rice quality	: Coarse



Yield (per Acre)

Grains	: 18 bags (1350 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. This variety is highly suitable for making idly and dosa.
2. Also highly resistant to pest and disease.
3. It is suitable for cultivation in areas prone to water logging.

SIGAPPU KURUVIKAR

Cultivation Aspects

Season	: Samba, Late samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 120 - 125 days
Nursery age	: 25 - 28 days
Height of crop (cm.)	
a) Average	: 95.0
b) Maximum	: 102.9
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.4
b) Maximum	: 22.7
Number of grains per earhead	
a) Average	: 86
b) Maximum	: 110

Characteristics of the Grain

Colour of the grain	: It is dark green during the flowering stage, dark green in the milky stage and on maturity turns yellow and has long light black stripes.
Weight of 1000 grains	: 34.169 grams
Colour of rice	: Brown

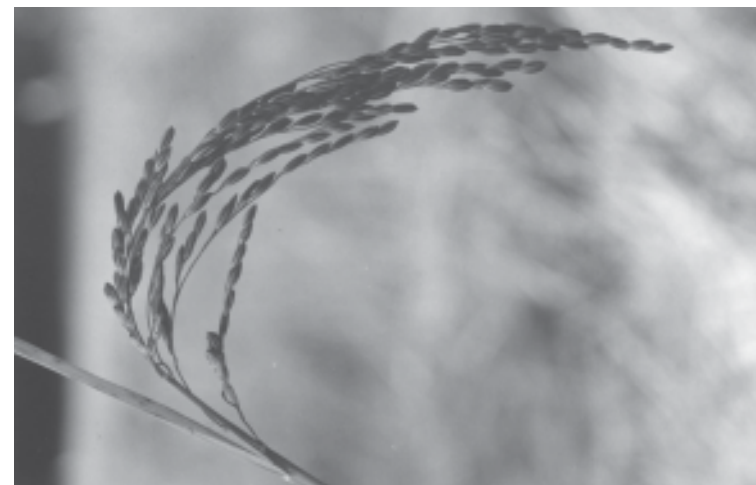
Rice quality	: Coarse
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Yield (per Acre)

Grains	: 14 bags (1050 kg.)
Straw	: 35 bundles (1050 kg.)

Special Features of the Variety

1. This variety is highly suitable for making the idly and dosa.
2. Resistant to brown plant hopper and case worm.
3. Gives a good yield even when dry sown.
4. Since the weight of the grain is high, it gives good yield.
5. Highly resistant to pest and disease.



Earhead of Sigappu Kuruvikar

VAIGUNDA

Cultivation Aspects

Season	: Samba, Late samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 145 - 150 days
Nursery age	: 35 - 40 days
Height of crop (cm.)	
a) Average	: 121.9
b) Maximum	: 135.0
Lodging/Non-lodging	: Lodging



Researcher Mrs. Subhashini Sridhar collects information from the farmers

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 23
b) Maximum	: 24

Number of grains per earhead

a) Average	: 193
b) Maximum	: 210

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow.
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Weight of 1000 grains	: 22.096 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18 bags (1350 kg.)
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Straw	: 60 bundles (1800 kg.)
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Special Features of the Variety

1. Extremely suitable for making 'Pori' (puffed rice).
2. Also suitable for making idli.
3. It can be grown in areas prone to water logging as well as in drought prone areas.
4. This variety grows faster than the weeds in the field.

JILJIL VAIGUNDA

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 125 - 130 days
Nursery age	: 35 - 40 days
Height of crop (cm.)	
a) Average	: 104.8
b) Maximum	: 115.2
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 22.3
b) Maximum	: 24.2
Number of grains per earhead	
a) Average	: 124
b) Maximum	: 155

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns straw coloured.
Weight of 1000 grains	: 24.408 grams
Colour of rice	: Dullish white

Rice quality	: Coarse
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Yield (per Acre)

Grains	: 16 bags (1200 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. This variety is highly drought resistant.
2. This variety is suitable for making idli, dosa and also in the South Indian meal.
3. This variety comes to harvest 10 days before the Vaigunda.



**Biofertiliser being mixed with seeds before sowing
(Mr. Neelamegam, Mr. Raghu)**

THOORYAMALLEE

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

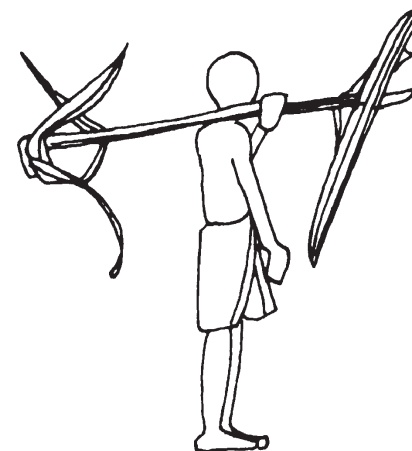
Crop duration	: 135 - 140 days
Nursery age	: 30 - 35 days
Height of crop (cm.)	
a) Average	: 115
b) Maximum	: 125
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 22.2
b) Maximum	: 25.0
Number of grains per earhead	
a) Average	: 80
b) Maximum	: 130

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns straw coloured.
Weight of 1000 grains	: 19.118 grams
Colour of rice	: White



Rice quality	: Fine
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Yield (per Acre)

Grains	: 15 bags (1125 kg.)
Straw	: 35 bundles (1050 kg.)

Special Features of the Variety

1. The rice of this variety is highly suitable for the South Indian meal. It is also used for making special dishes like 'Biryani'.
2. During the flowering stage the earheads look like flowers.
3. In Tamil 'Thooyamallee' literally means pure jasmine. Since the rice of this variety is white in colour like that of jasmine it is known by this name.
4. Highly resistant to pest and disease.
5. Since this is a fine variety it fetches a good price.

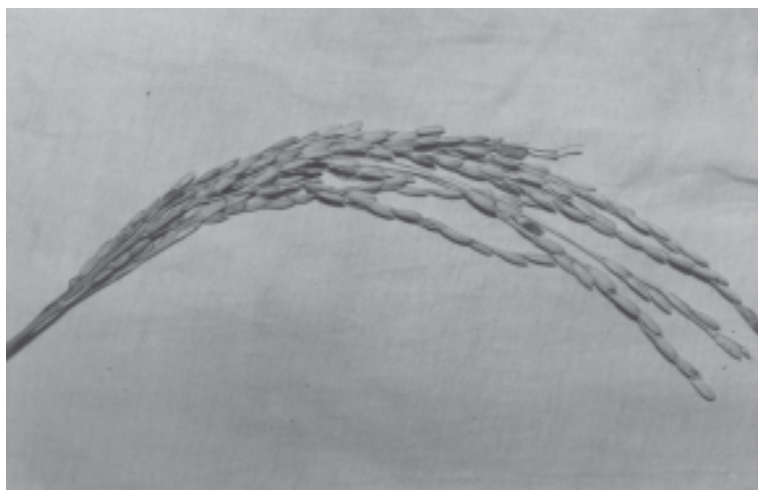
G.E.B. 24

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 135 days
Nursery age	: 28 - 30 days
Height of crop (cm.)	
a) Average	: 107.5
b) Maximum	: 115.8
Lodging/Non-lodging	: Since the stem of this variety is very thin it dries up during the milky stage itself. However, this is normal and does not affect the crop.



Earhead of G.E.B. 24

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 22.4
b) Maximum	: 26.2

Number of grains per earhead

a) Average	: 88
b) Maximum	: 160

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns straw coloured.
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Weight of 1000 grains	: 16.557 grams
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Colour of rice	: White
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Rice quality	: Fine
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Yield (per Acre)

Grains	: 21 bags (1575 kg.)
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Straw	: 30 bundles (900 kg.)
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Special Features of the Variety

1. Since this is a fine variety the rice is suitable for the South Indian meal and also for preparing a special dish 'Biriyan'. It is highly resistant to drought.
- 2.

Remarks

This variety is a selection from the local variety Kitchili samba. G.E.B. 24 denotes that the strain was evolved by the Government Economic Botanist.

SEMPALAI

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey, Sandy clay

Agronomical Features

Crop duration	: 100 - 105 days
Nursery age	: 21 - 25 days
Height of crop (cm.)	
a) Average	: 107.0
b) Maximum	: 116.4
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 22.0
b) Maximum	: 22.6
Number of grains per earhead	
a) Average	: 122
b) Maximum	: 131

Characteristics of the Grain

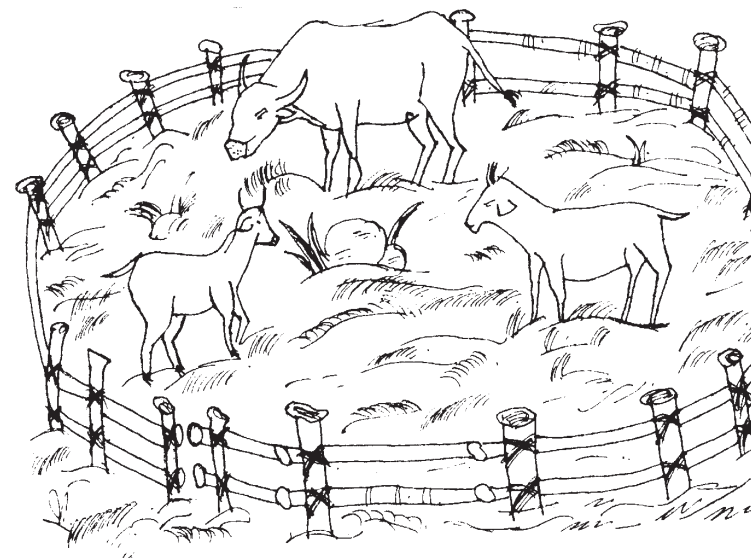
Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns red.
Weight of 1000 grains	: 23.950 grams
Colour of rice	: Dullish white
Rice quality	: Coarse

Yield (per Acre)

Grains	: 15 bags (1125 kg.)
Straw	: 45 bundles (1350 kg.)

Special Features of the Variety

1. The rice of this variety is good for the South Indian meal.
2. It is highly suitable for making 'Pori' (puffed rice).
3. Highly resistant to pest and disease.



KUZHIYADICHAN

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey, Sandy clay. Also suitable for saline soil.

Agronomical Features

Crop duration	: 105 - 110 days
Nursery age	: 21 - 25 days
Height of crop (cm.)	
a) Average	: 71.8
b) Maximum	: 80.4
Lodging/Non-lodging	: Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 15.1
b) Maximum	: 18.0

Number of grains per earhead

a) Average	: 85
b) Maximum	: 120

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow and has long black stripes.
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Weight of 1000 grains	: -
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Colour of rice	: Brown
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 13 bags (975 kg.)
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Straw	: 30 bundles (900 kg.)
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Special Features of the Variety

1. Kuzhiyadichan is highly suitable for making dishes such as idly and dosa.
2. Suitable for saline soil and land which has good drainage facility.
3. Highly drought resistant.
4. Highly resistant to pest and disease.
5. It is also called 'Kulikulichan'. It is ideal for lactating mothers, since it increases the milk flow.

KALLIMADAIYAN

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 150 days
Nursery age	: 35 - 40 days
Height of crop (cm.)	
a) Average	: 128.7
b) Maximum	: 132.4
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 23.3
b) Maximum	: 25.0
Number of grains per earhead	
a) Average	: 100
b) Maximum	: 145

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity it turns straw coloured.
Weight of 1000 grains	: 26.901 grams
Colour of rice	: White

Rice quality	: Coarse
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Yield (per Acre)

Grains	: 16 bags (1200 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. The rice of this variety is highly suitable for making a South Indian snack called 'Murukku'. The Manapparai murukku became very popular since it was prepared by using this variety of rice.
2. It is also suitable for the South Indian meal.
3. Highly resistant to pest and disease.



Mr. Arumugasamy collects details regarding the crop in the experimental farm

PISINI

Cultivation Aspects

Season	: Samba
Cultivation method	: Best if dry sown
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 120 days
Nursery age	:
Height of crop (cm.)	
a) Average	: 102.7
b) Maximum	: 111.4
Lodging/Non-lodging	: Lodges after the earhead matures.



Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 17.5
b) Maximum	: 25.0

Number of grains per earhead	
a) Average	: 132
b) Maximum	: 170

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, black with long yellow stripes in the milky stage and on maturity it is seen with long black and yellow stripes.
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Weight of 1000 grains	: 31.595 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18 bags (1350 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. Extremely suitable for making dosa and porridge.
2. Also suitable for making 'Aval' (flattened rice).
3. Highly drought resistant.
4. Since the earheads are found with awn it is important to take extra care while removing the grains.
5. If there is excess mist during the milky stage the grains become chaffy.

KOOMVALAI

Cultivation Aspects

Season	: Samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay. It also grows in coastal areas

Agronomical Features

Crop duration	: 128 - 130 days
Nursery age	: 28 - 30 days
Height of crop (cm.)	
a) Average	: 135.2
b) Maximum	: 142.2
Lodging/Non-lodging	: Lodging

Characteristics of Earhead

Length of the earhead (cm)	
a) Average	: 26.4
b) Maximum	: 27.4
Number of grains per earhead	
a) Average	: 162
b) Maximum	: 233

Characteristics of Grains

Colour of the grain	: It is dark green during the flowering stage and the milky stage. On maturity it turns yellow and has long dull black stripes.
Weight of 1000 grains	: 32.211 grams
Colour of rice	: Brown

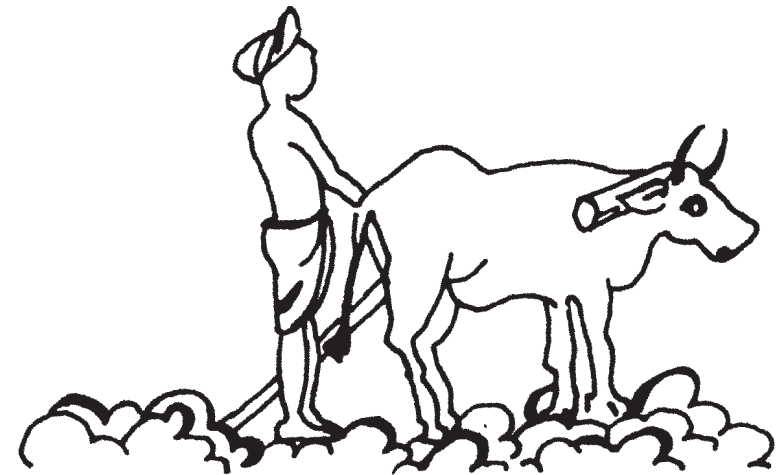
Rice quality : Coarse

Yield (per Acre)

Grains	: 18 bags (1350 kg.)
Straw	: 60 bundles (1800 kg.)

Special Features of the Variety

1. This variety grows up to the height of 4.5 - 5 feet.
2. The straw of this variety is preferred as a roofing material.
3. The rice is highly suitable for making dishes such as idly and dosa.
4. This variety is suitable for sandy soil and also areas prone to water logging.



KUDAIVAZHAI

Cultivation Aspects

Season	: Late samba
Cultivation method	: Transplantation
Soil type	: Clayey, sandy clay

Agronomical Features

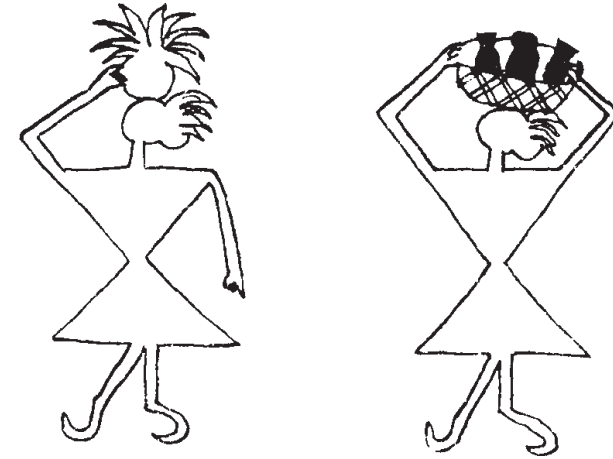
Crop duration	: 120 - 125 days
Nursery age	: 25 - 28 days
Height of crop (cm.)	
a) Average	: 138.0
b) Maximum	: 152.7
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 26.7
b) Maximum	: 27.3
Number of grains per earhead	
a) Average	: 172
b) Maximum	: 243

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity it turns straw coloured.
Weight of 1000 grains	: 33.918 grams
Colour of rice	: Red



Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18.5 bags (1400 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. The earheads of this variety appear like open umbrellas and hence the name 'Kudaivazhai' (Kudai = Umbrella).
2. The rice of this variety is highly suitable for making dishes such as Idly and Dosa.
3. Since it grows upto 5 feet, the stem is 2.5 cm thick the straw is used as roofing material.
4. This variety is highly suitable for areas where there is water logging.
5. Since this is a short duration variety it can even be cultivated thrice a year.

PITCHAVARI

Cultivation Aspects

Season	: Navarai
Cultivation method	: Dry sown, Transplantation
Soil type	: Clayey, Saline

Agronomical Features

Crop duration	: 110 - 115 days
Nursery age	: 21 - 25 days
Height of crop (cm.)	
a) Average	: 102.3
b) Maximum	: 106.1
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 18.3
b) Maximum	: 19.3
Number of grains per earhead	
a) Average	: 53
b) Maximum	: 57

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns black in colour.
Weight of 1000 grains	: 19.260 grams
Colour of rice	: White

Rice quality	: Fine
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Yield (per Acre)

Grains	: 8 bags (600 kg.)
Straw	: 30 bundles (900 kg.)

Special Features of the Variety

1. The rice of this variety is highly suitable for making a special dish called 'Pittu'.
2. It is used for treatment of diarrhoea in cattle. It also increases appetite in cattle.
3. Highly resistant to pest and disease.
4. It is suitable for cultivation in areas prone to water logging as well as drought prone areas.



CHENGALPAT SIRUMANI

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Clayey, Sandy clay, Alluvial soil

Agronomical Features

Crop duration	: 165 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 125
b) Maximum	: 148
Lodging/Non-lodging	: Medium Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 23.4
b) Maximum	: 26.6

Number of grains per earhead

a) Average	: 127
b) Maximum	: 156

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow in colour and is found with long black stripes.
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Weight of 1000 grains	: 22.389 grams
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Colour of rice	: White
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 20 bags (1500 kg.)
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Straw	: 60 bundles (1800 kg.)
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Special Features of the Variety

1. The rice is highly suitable for the South Indian meal.
2. It is a high yielder. It was grown very prominently in the Chengalpattu district of Tamil Nadu and hence the name "Chengalpat Sirumani".
2. Grows in areas prone to water logging.

KADAIKAZHUTHAN

Cultivation Aspects

Season	: Samba
Cultivation method	: Transplantation
Soil type	: Clayey, Sandy clay, Aluvial soil

Agronomical Features

Crop duration	: 165 days
Nursery age	: 40 - 45 days
Height of crop (cm.)	
a) Average	: 117.5
b) Maximum	: 135.0
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.5
b) Maximum	: 21.8
Number of grains per earhead	
a) Average	: 143
b) Maximum	: 166

Characteristics of the Grain

Colour of the Grain	: It is light green during the flowering stage, black in the milky stage and on maturity turns red coloured and is found with straw coloured tips.
Weight of 1000 grains	: 20.332 grams

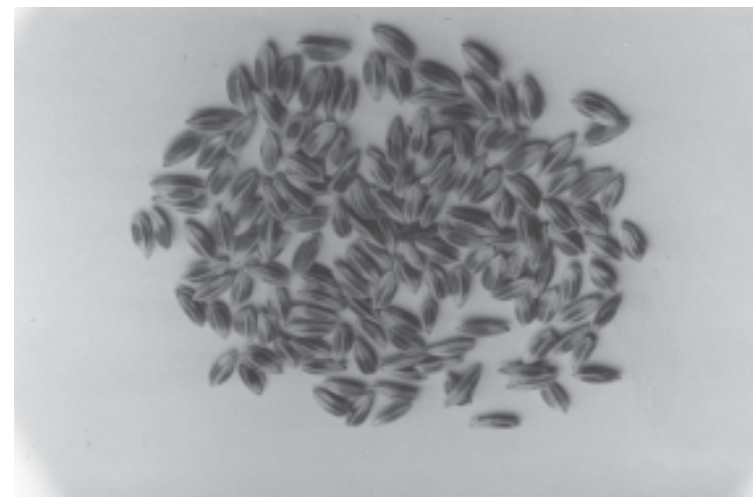
Colour of rice	: White
Rice quality	: Fine

Yield (per Acre)

Grains	: 18 bags (1350 kg.)
Straw	: 40 bundles (1200 kg.)

Special Features of the Variety

1. The rice of the variety is highly suitable for the South Indian meal.
2. It is also known as 'Garudan samba'. The appearance of the grains is like the neck of the brahmini kite (Garudan) - ie. it has a white ring and hence the name.
3. It is suitable for making a speciality dish called 'Pittu' of South India.
4. Grows well in areas which has good drainage facilities.



Grains of Kadaikazhuthan

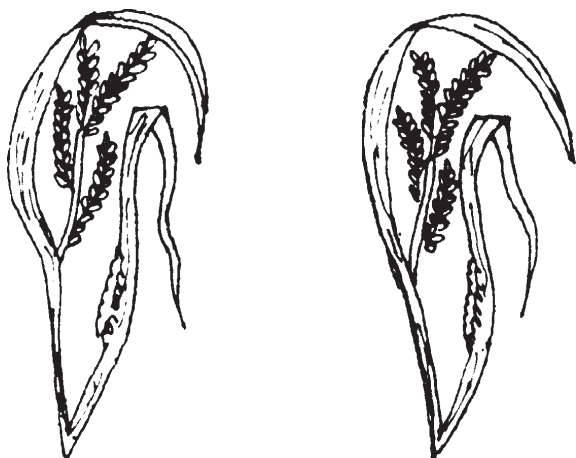
ARUVADHAM KODAI

Cultivation Aspects

Season	: Navarai
Cultivation method	: Wet sown
Soil type	: Saline, Clayey, Sandy clay

Agronomical Features

Crop duration	: 70 days
Nursery age	: -
Height of crop (cm.)	
a) Average	: 75.3
b) Maximum	: 81.1
Lodging/Non-lodging	: Lodging



Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 14.3
b) Maximum	: 15.2

Number of grains per earhead

a) Average	: 49
b) Maximum	: 64

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green during the milky stage and on maturity turns yellow in colour and has long black stripes.
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Weight of 1000 grains	: -
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 8 bags (600 kg.)
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Straw	: 30 bundles (900 kg.)
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Special Features of the Variety

1. This variety is also known as "Poongar".
2. After harvest of the samba paddy the land is ploughed once or twice and this variety is sown.

KATTU KUTHALAM

Cultivation Aspects

Season	: Samba, Late samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 121 - 125 days
Nursery age	: 30 days
Height of crop (cm.)	
a) Average	: 123.3
b) Maximum	: 126.2
Lodging/Non-lodging	: Medium Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 21.8
b) Maximum	: 23.3
Number of grains per earhead	
a) Average	: 82
b) Maximum	: 89

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns dark yellow and has long stripes.
Weight of 1000 grains	: 31.636 grams
Colour of rice	: Red

Rice quality	: Coarse
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Yield (per Acre)

Grains	: 10 bags (750 kg.)
Straw	: 35 bundles (1050 kg.)

Special Features of the Variety

1. Since this is a short duration variety it can be grown in all the three seasons.
2. It is extremely suitable for making dishes like idly and dosa.
3. The grain weight is quite heavy.
4. Grows in areas which have good drainage facility.



Earheads of Kattu Kuthalam

KALLUNDAI

Cultivation Aspects

Season	: Late samba, Navarai
Cultivation method	: Dry sown, Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 110 days
Nursery age	: 22 - 24 days
Height of crop (cm.)	
a) Average	: 112.9
b) Maximum	: 121.4
Lodging/Non-lodging	: Lodging



Earhead of Kallundai

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 20.6
b) Maximum	: 25.2

Number of grains per earhead

a) Average	: 116
b) Maximum	: 164

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow and found with black stripes.
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Weight of 1000 grains	: 30.768 grams
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Colour of rice	: Brown
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 17.25 bags (1300 kg.)
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Straw	: 40 bundles (1200 kg.)
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Special Features of the Variety

1. The rice of this variety is highly suitable for making dishes such as idly and dosa.
2. Grows well in soil which is high in sand content. Useful for cultivation in coastal areas.

PERIYAVARI

Cultivation Aspects

Season	: Late samba
Cultivation method	: Transplantation
Soil type	: Sandy clay

Agronomical Features

Crop duration	: 115 - 120 days
Nursery age	: 24 days
Height of crop (cm.)	
a) Average	: 128.5
b) Maximum	: 131.6
Lodging/Non-lodging	: Lodging

Characteristics of the Earhead

Length of the earhead (cm)	
a) Average	: 23.5
b) Maximum	: 27.1
Number of grains per earhead	
a) Average	: 145
b) Maximum	: 213

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns dark yellow and found with long black stripes.
Weight of 1000 grains	: -
Colour of rice	: Red

Rice quality	: Coarse
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Yield (per Acre)

Grains	: 18.5 bags (1400 kg.)
Straw	: 50 bundles (1500 kg.)

Special Features of the Variety

1. The leaves and stem of this variety resemble the sugarcane.
2. The rice is suitable for making dishes such as idly and dosa.
3. Since the circumference of the stem is more than 2 cm., it is a preferred roofing material.



Grains of Periyavari

SADAKAR

Cultivation Aspects

Season	: Samba, Late samba, Navarai Best season : Late samba
Cultivation method	: Dry sown, Transplantation
Soil type	: Soil with more sand content preferred.

Agronomical Features

Crop duration	: 105 - 108 days
Nursery age	: 20 - 23 days
Height of crop (cm.)	
a) Average	: 103.5
b) Maximum	: 119.1
Lodging/Non-lodging	: Lodging



Grains of Sadakar

Characteristics of the Earhead

Length of the earhead (cm)

a) Average	: 21.0
b) Maximum	: 25.2

Number of grains per earhead

a) Average	: 123
b) Maximum	: 151

Characteristics of the Grain

Colour of the grain	: It is light green during the flowering stage, dark green in the milky stage and on maturity turns yellow in colour.
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Weight of 1000 grains	: 30.401 grams
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Colour of rice	: Red
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Rice quality	: Coarse
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Yield (per Acre)

Grains	: 15 bags (1125 kg.)
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Straw	: 40 bundles (1200 kg.)
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Special Features of the Variety

1. It is highly suitable for cultivation in the hilly slopes. It is cultivated in the hilly slopes of Kalvarayan range in the Villupuram district of Tamil Nadu.
2. It is extremely suitable for making dishes like idly and dosa.
3. The rice is also suitable for the South Indian meal.
4. Highly resistant to pest and disease.

Centre for Indian Knowledge Systems : A Brief Profile

Objectives

The Centre for Indian Knowledge Systems is an organisation devoted to exploring and developing the contemporary relevance and applications of traditional Indian knowledge systems - with the focus areas being agriculture and health care. Our aim is to strengthen and revitalize indigenous sciences and practices.

Activities

Some of the major programmes of the centre are :

- Action Research and Training Programmes on various aspects of Organic Farming.
- Setting up of Rural Gene Banks for the conservation of Traditional Seed Varieties.
- Research on the applications of Vrکشayurveda (Traditional Indian Plant Science).
- Setting up of an Organic Farming Resource Centre which would act as a clearing house for information on organic practices.
- Arogyam - a scheme to take organic food grown by farmers to consumers at reasonable prices.
- Training Programmes on the use of Traditional Medicine for various groups.
- Production of Audiovisuals, Publication of Newsletters, Manuals, Posters and Monographs on Traditional Health Care and Traditional Agriculture.

For further information contact :

Centre for Indian Knowledge Systems

No.30, Gandhi Mandapam Road
Kotturpuram, Chennai - 600 085

Ph: (044) 4471087, 4475862, Fax: (044) 4471114
e-mail : ciks@vsnl.com, website : www.ciks.org