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CONTENTS

NEW STRAINS OF PADDY FROM AGRICULTURAL RESEARCH STATION, MARUTERU

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The Maruteru Agricultural Research Station was opened in July 1925, as a breeding station for improving the local paddy varieties of both the Godavary and Kistna deltas. Selection of better yielding strains has been the main line of work, though agronomic investigation has been directed to improve the existing cultural and manurial practices of the tract.

The station is situated in the village of Neggipudi near Maruteru Lock along the Narsapur canal. Though it was originally intended to deal with the varieties of both the Kistna and Godavary districts, actual experience has however, proved that Maruteru was unsuitable for carrying on any intensive work on the Kistna varieties. Most of the strains that have been evolved belong primarily to the varieties now grown in the Godavary Districts. Luckily, however, with certain amount of preliminary work at Maruteru, it has been possible to

evolve two high yielding strains one in each of the two important varieties of Kistna and Guntur Districts. That this was possible was due to the willing co-operation of the Deputy Director of Agriculture, II Circle, and some of the enthusiastic land-lords who very willingly made their lands available for the actual testing of the selections made at the Maruteru Station.

The isolation of strains, and yield tests with them, both on the station and in ryots' fields, have been going on for the last seven years, with the result that there are now available for release from the station, eight strains. Short notes about each of these strains, the varieties they belong to, their special characteristics, and the tracts and conditions for which they are suitable are given separately.

These notes are expected to be helpful to the ryots in choosing the particular strain most suited to their conditions. The percentage increases of the strains mentioned in the notes indicate their values under average normal conditions of soil and season. It need not be emphasised that the maintaining or increasing the ascertained merits of the strains rests entirely with the cultivators who grow them. First, the worth of the strains can be maintained by adopting all necessary precautions against their getting mixed up with other varieties. Secondly, experiments with the strains on the station have proved that it is possible to enhance the indicated percentage of increases by over 50 per cent. if the fields grown with these strains are suitably fertilised, i. e., the ryot gets his maximum return for any outlay in manuring, by the growing of the strains in preference to local seed.

Bontha Akkullu. Maruteru No. 1 (Mtu. 1). This is a strain of *Akkullu*, a variety grown over forty to fifty per cent. of the area in the Godavary delta and portions of the Kistna delta as well, under a variety of conditions, from the precarious uplands to the saline and submergible coastal areas. The variety is also slowly making its way in the Guntur district. This strain has been under trial on the station for six years under a variety of conditions and has recorded an average increase of 20 per cent. over ryots' seed. Two year's trials at a number of centres in the district have established definitely its superiority and its cosmopolitan nature. The grain yield varied between 2800 to 3700 lb. per acre, depending upon the season, fertility of the land, manure applied and time of planting. Its normal flowering time is the third week of October, irrespective of the time of sowing or planting, with broad limits. The rice is white.

Potti Akkullu. Maruteru No. 2 (Mtu. 2). This is another strain of *Akkullu* with rather slower initial growth found suitable to rich lands that usually suffer from rank growth and premature lodging. During six years' trial it has recorded an average increase of 16 per cent over the local seed. It normally flowers during the third week of

October, slightly later than Mtu. 1.—(*Bontha Akkullu*). The grain yield obtained on the station ranged between 2800 to 3500 lb. per acre, according to the time of planting, and the fertility of the plot. The rice is white.

Potti Basangi Maruteru No. 3 (Mtu. 3). This is a bulk made up of five of the high yielding strains in *Basangi* which is also known as *Rasangi* in the East Godavary District. The cultivation of *Basangi* and *Rasangi* is confined to about ten per cent. of the area, particularly in the higher portions of the delta. *Basangi* though generally a higher yielder than the other medium and late varieties of the tract, its area is restricted, due to the fact that its harvest invariably synchronises with the north-east monsoon rains. The average increase of the strains making up the bulk was 12 per cent. over the ryots' seed during the four-year period of trial on the station. The acre yield of *Potti Basangi* varied between 3500 to 4500 lb. depending upon the time of planting and the fertility of the plot. It is also reported by ryots who have grown this during the two previous years, that it gave between 25—28 bags of paddy per acre in rich and early planted fields, against the maximum yield of 22 bags obtained previously. Apart from its potentiality for high yields, another redeeming feature of *Potti Basangi*, as the name would indicate, is its short slow-growing habit in the initial stages which helps the crop to get over the lodging trouble, invariably experienced with the *Basangi* crop in wet harvest seasons. It flowers generally during the fourth week of September. Its rice is white and the grain is short and plump compared to the local seed. *Potti Basangi* is particularly suitable to areas where planting can be done early, but not suitable to areas of poor fertility and where planting is done late.

Pedha Basangi, Maruteru No. 4 (Mtu. 4). This is another selected bulk composed of 2 strains. It is later in duration than *Potti Basangi* by a week. It has been found useful to areas of average fertility planted late. The bulk has recorded, an average increased yield of 9 per cent. over the local seed during 4 year's trials. The yield varied between 3200 to 3800 lb. per acre. The rice is white and the grain size is narrower than the local seed. Further *Pedha Basangi* has been noted to stand indifferent water supply during its vegetative growth and has recorded an acre yield of 3000 to 3300 lb. per acre under such conditions.

Bontha Krishnakatukkulu, Maruteru No. 5 (Mtu. 5). This is a selected bulk comprising two high yielding strains of *Krishnakatukullu*. This is a popular variety of the West Godavary district covering 30—40 per cent of the area in the Western delta, and due to the fineness of grain always fetches better prices. The two strains composing the bulk maintained an average increased yield of 10—12 per cent. over the ryots' bulk during the past six years of the trial. The flowering

time is towards the last week in October. It has the desirable growth habit to get over lodging under conditions where a crop from ryots, bulk invariably lodges. *Krishnakatukullu* as a variety is susceptible to unsetting if rainy weather synchronises with its flowering period. On that account the grain yield is liable to fluctuate from season to season. On the station under ordinary conditions of cultivation, it has produced acre yields of 2800—3400 lb.

Potti Atragada. Maruteru No. 6 (Mtu. 6). This is a strain in variety *Atragada* of the Godavary delta which is cultivated in about 5 per cent. of the area confined mostly to the lower reaches, where water does not drain off early for harvest. It has given an average increase of 16 per cent over the ryots, bulk tested over a period of four years. The crop grown in the district for observation has impressed the grower, of its superiorty. The grain yield varies between 2800 to 3000 lb. per acre. It flowers during the end of October and is quite different from both the *Pedha* and *Sanna Atragadas* of the Kistna district which flower between the 10th and 15th of November.

Gutti Kusuma. Maruteru No. 7 (Mtu 7). This is a selected bulk composed of a few promising strains in *Gutti Kusuma*, a variety grown over 40—50 per cent. of the area in Kistna and Guntur deltas. This selected bulk was tested for three seasons in the district itself in ryots' lands and has given a consistent average increase of 16 per cent. at a number of centres. The grain yield varied between 3400 to 3700 lb. per acre in two of the trial plots as compared to 2700 to 3200 lb. obtained from ryot's seed. It flowers during the second week in November, later than the local Kusuma by about a week and it is not subject to the lodging trouble. It gives bold, well-filled, good, white rice.

Vanki Sannam. Maruteru No. 8 (Mtu 8). This is a strain in *Vankisannam*, also known as Delhi *Boghum*. The variety is cultivated in about 15—20 per cent of the area in the Kistna and Guntur deltas, specially confined to the higher delta and well drained soils. The strain has been under test in the district for three consecutive seasons and has recorded an average increase of 10 per cent. over the local seed. An increase of over 18—20 per cent. has also been obtained in plots that escaped damage by rains during the flowering period. The maximum grain yield obtained in one of the trial plots at *Duggirala* was 3400 lb. per acre. It flowers during the end of first week in November, three to four days earlier than the ryots' seed. *Vankisannam*, as a variety, is defective in unsetting and shedding qualities, but this strain is noticed to be comparatively free from these defects. The crop raised from the strain has a characteristic dark green appearance during the early vegetative growth and an erect flag leaf during the flowering and ripening stages.