

glume and
ie and the
tic chaffy
grouping

27:27:10
IV shows
e may be
e present
Medium
e. The
expected

abilities.
of many
together,
nt effect
ctors for
d reduc-
y needed
gth with
in many
here are
leavour,
at cross
secured,
normal
s offers,
e length
e many
e evolu-

ltivated
12, and
e above
length.
play of
: Long

NOTE ON THE METHOD OF COMPUTING CROP FORECASTS

BY N. K. ADYANTHAYA,

Statistical Officer, Madras.

Forecasts reports of area and yield are framed for nine crops, viz., paddy, sugarcane, groundnut, gingelly, castor, cotton, pepper, ginger and senna. The estimates relate to all the districts in which the respective crops are grown.

Approximately two-thirds of the cultivated land in the Madras Presidency is Government or ryotwari land and has been carefully surveyed. All the village officers therein are appointed and controlled by Government officials. In the ordinary course of his work, the village accountant sends by the 25th of each month to the Revenue Inspector, i. e., the officer in charge of a group of villages varying in number, a detailed cultivation statement of the sowings of crops and the outturn of harvested crops in his village in terms of annas, under the separate heads, 4 to 7 annas, 8 to 11 annas, 12 annas and 13 to 16 annas (12 annas standing for a normal crop). The Revenue Inspector records in a separate forecast register which he maintains, the distribution of area and the expected anna yield for each crop in each village in the firka and strikes a total of the areas and an average of the anna outturns based on the village accountants' figures and his personal experience. In the month in which a forecast report is due, the Tahsildar compiles the figures of area under the crop sown to-date since the beginning of the forecast year and also the expected average anna yield figure from the firka registers submitted to him by the Revenue Inspectors. He then strikes a total of the areas sown in the several firkas and an average anna estimate of the outturn for the whole taluk, based on the figures reported by Revenue Inspectors and his personal experience. The return so prepared is sent to the Board of Revenue.

Nearly a third of the Presidency is whole inam and zamindari of which only a part has been accurately surveyed and for which somewhat similar returns are prepared. In every case, the Tahsildar or Deputy Tahsildar estimates the area and yield as well as he can from his own knowledge and from reports of the estate officials as the village accounts are not carefully maintained in the estate villages. The figures for whole inam and zamindari areas are included but shown separately in the reports sent by Tahsildars to the Board of Revenue.

The Indian States of Pudukkottai and Banganapalli send similar reports direct to the Board of Revenue for cotton only.

Thus some 240 reports for each of the forecast crops except senna, pepper and ginger are received in the Board's office. The

reports received are scrutinised in the first instance and the figures are then tabulated in the forecast registers.

It must however be understood that the figures of area reported for the forecasts are not complete owing partly to a certain percentage of village accountants and Revenue Inspectors failing to report in time and partly to the fact that *karnams* sometimes fail to book the entire area under cultivation up to a stated period. The reported area has therefore to be subjected to a correction in the Board's office. The correction applied is mainly to secure that the corrected area may represent as closely as possible the actual area sown in the period to which the forecast relates. The correction has in the first instance to take into account the liability to under-estimate or over-estimate the area by certain *Tahsildars* as revealed by a comparison of the areas reported in the final forecasts with those in the G-returns (*Jamabandi* return) over a series of years. It has also to take into account the liability to under-estimate or over-estimate the area on the part of *Tahsildars* contrary to what the state of the season as revealed in the weekly season reports by collectors and the reports of Deputy Directors of Agriculture would warrant.

The yield of a crop in a district is the product of three factors, namely (1) the area under the crop in acres, (2) the normal yield per acre and (3) the seasonal factor or the condition figure which expresses the relation in the form of a percentage of the actual crop to the normal crop.

(1) has already been dealt with. As for (2), the figures of the normal yield per acre for the several crops are given in Appendix VIII to the season and crop report. The normal yields for crops were fixed by the Director of Agriculture in 1919.

As regards the seasonal factor, the procedure adopted in the Board's office is as follows:—

The average anna figure of each crop in the district is first determined.

Let A acres be the total area under a crop made up of

a_1 acres under 0 to 3 annas.

a_2 acres under 4 to 7 annas.

a_3 acres under 8 to 11 annas.

a_4 acres under 12 annas.

a_5 acres under 13 to 16 annas.

so that $A = a_1 + a_2 + a_3 + a_4 + a_5$.

The average anna figure (reported) will then be

$$Y = \frac{(a_1 \times 1\frac{1}{2}) + (a_2 \times 5\frac{1}{2}) + (a_3 \times 9\frac{1}{2}) + (a_4 \times 12) + (a_5 \times 14\frac{1}{2})}{A} \text{ annas.}$$

The equivalent percentage figure will be

$$p = \frac{Y}{12} \times 100 \text{ as 12 annas is equivalent to normal (=100).}$$

figures are

area re-
a certain
failing to
es fail to
od. The
n in the
that the
tual area
tion has
estimate
y a com-
se in the
s also to
nate the
e season
reports

factors,
eld per
xpresses
ne nor-

he nor-
VIII to
e fixed

in the

deter-

of whi

somew

from

The

shown

annas.

report

seas

The village accountant's pessimism will now have to be allowed for. For the main crops whose yields are calculated and entered in the season and crop report, figures of p are available from 1902—3 or some later year. If the accountant were not a pessimist, his p 's for any crop would be a series whose average over a number of years would equal or approximate to 100, for an average crop is the best approximation to a normal crop.

It has been found that the actual averages of p 's for various crops and districts are however always less than 100, and in fact range from 70 to 90.

The method of interpreting the accountant's report is as follows:—

Let 80 be the average of p 's for paddy in a district. If 75 is the p for the year in question, the corrected percentage (condition factor) will be entered as

$$\frac{75 \times 100}{80} = 93.75.$$

$\frac{100}{80}$ is called the correcting factor and this figure varies for each crop and each district.

SATHGUDI ORANGE CULTIVATION NEAR TIRUTTANI AND PUTTUR, CHITTOOR DISTRICT

BY S. MUTHUSWAMI,

Agricultural Demonstrator, Tiruttani.

Introduction. *Sathgudi* is one of the best varieties of tight skinned oranges in South India. It must have been introduced in these parts from Sathgur—the original home in Gudiyatham taluk, North Arcot District. The area is about thousand acres in both the divisions and the extent is more in Puttur than in Tiruttani division.

The average area owned by an individual grower is about one acre. There is a great demand for this fruit and consequently the area is gradually increasing every year. Inadequate water-supply in the irrigation sources however seems to be the limiting factor in the extension of the area.

Details of cultivation. *Soil.* The best soil suited for raising this fruit tree is 'Erragulaka' or (*Erraregada*), red soil up to a depth of three feet with well-drained sub-soil, not less than seven feet.

Seed and sowing. Generally healthy seeds are collected during November and December from well-developed and ripe fruits borne by old trees yielding profusely. The nursery bed is dug with *mamutties* three or four times and brought to a fine tilth. Usually red-soil is preferred for raising seedlings. Fresh seeds are dibbled in the nursery, two inches apart. On every alternate day the seed bed is watered. It takes about a month for the seeds to sprout.