Agricultural News Letter

January, 1949.

Manuring and Irrigation. On the black clayey soils of the Bellary District, Sorghum (*Cholam* or *Jonna* or *Jowar*) and cotton are the main crops that are grown. In the rain fed conditions, the normal acre yields have been 450 lbs. of sorghum. By irrigation alone, the yield was increased to about 900 lbs. but when irrigation was combined with adequate manuring, the results were still better. Sorghum, manured at 60 lbs. nitrogen per acre, and irrigated, gave an acre yield of 2,244 lbs. of grain and cotton, manured at 80 lbs. nitrogen, gave a return of 672 lbs. per acre of unginned cotton. Further work is in progress. The indications are that where crops are irrigated, there is need to manure the land as well, in order to get the full worth of irrigation.

Summer Paddy Crop. The majority of paddy grown in this province is after summer, when water supplies are assured after the monsoon rains. But to a small extent paddy is grown in the season known as Kar and also in the season Kuruvai. In tracts, where the percentage of the area of Kar or Kuruvai crop could be large, the yield of paddy is also high. In this season, the following have been some of the outstanding yield records obtained from the harvest in September last. The paddy strains, known as Ambasamudram 1, 2 and 7, have recorded yields of 3550, 3310 and 3610 lbs. per acre. The strain ADT. 3 has given an acre yield of 3300 lbs. which may be said to be the record so far at the Pattukottai Station. Therefore, one of the means to enhance the yields of paddy in this province would be to increase the area that could be grown with either Kar or Kuruvai paddy varieties.

Thaladi Paddy crops. In very many fields, the standing young Thaladi crop, especially those transplanted late in the season, remains stunted in growth and some cultivators are of the view that it is due to "Soorai" caused by meal bugs. But a closer examination would reveal that the central shoots of the infested plants or tillers are dried up, which is due to the attack of the paddy stem borer. A top dressing of Ammonium sulphate at the rate of about 100 lb. per acre would considerably improve the situation. Fortunately, one or two tillers invariably survive in each clump, even after a severe infestation of the pest and such surviving plants could be invigorated to tiller profusely by the application of ammonium sulphate. No time should, however, be lost hereafter for the application of the fertilizer. As the borer moths are attracted in large numbers to bright light at night, light traps would prove to be a useful remedial weapon, if all the ryots of a locality would adopt it in their common interest. Moths are attracted to light in larger numbers during dark nights than during moon-light nights. Local Agricultural Demonstrators may be consulted if necessary, for the setting up of the light traps.

Attack of Thrips, A timely spraying of the affected nurseries of Samba and Thaladi paddy with tobacco decoction, accompanied by a dressing of ammonium sulphate at 100 lb. per acre, considerably helps to put down the attack of thrips. The cost of spraying a 10 cent nursery which will plant an acre, will be Rs. 1—8—0.

Piricularia. From the variety of paddy known as Mologolukulu two cultures No. 2555 and No. 2202 have been found to be highly resistant to the blast disease known in Telugu as "Medavirupu" and in Tamil as "Kollai Noi". These two cultures are suitable for the district of Nellore and for the adjoining areas. In 1947 – 48 when this disease was severe in Nellore, the two cultures displayed a very high resistance to the disease and yielded 20 to 40 per cent over the local variety of Mologolukulu. They have been named BCP. 1 and BCP. 2 respectively and are being multiplied in an area of about 10,000 acres in this season. The farmers of the Nellore district hereafter need not suffer any loss by the incidence of the fungus, Piricularia, on paddy.

Sweet Lupin. A substitute for red gram, which will come up in higher elevations and milder climate, is under cultivation at the Agriculturas Research Station, Nanjanad. This is known as "Sweet lupin" (Lupinu angustifolius). It is a 7 month crop that is sown in April and harvested in October and November for seed purposes. The seeds can be used in the place of peas, while green, and in place of dhal, when dry. It can also replace horse gram for cattle feed. This is a suitable green manure crop for hills and produces remarkably large nodules of nitrogen fixing bacteria, which enrich the soil. A green manure crop sown with 100 lb. seed per acre would give 10,000 lb. of green material as manure, when harvested prior to the flowering stage. It is a boon to Nilgiris district where the soil is poor in plant food and organic matter, so essential to support good plant growth. Small quantities of seeds of this dual purpose crop can be obtained from the Superintendent, Agricultural Research Station, Nanjanad.

Karunganni Cotton. By way of further improvement over the earlier strain, a new one called "K. 2 cotton" which is vigorous and quick growing, has been evolved for general distribution. It gives 15 per cent more yield than the local mixture and about 3 per cent over the earlier strain K. 1. K. 2 is able to withstand the ill effects of untimely rains in January and February, which cause heavy shedding of flowers and immature bolls. K. 2 bears big bolls which open well, making it easy for quick and clean harvest; has a good staple length capable of spinning up to 28's standard warp counts. The strain would yield a higher income up to Rs. 20 per acre over the return of the local cotton. There is a scheme for the rapid multiplication and distribution of this improved cotton. Cotton growers of the Tinnevelly tract would do well to take full advantage of the scheme.

Sea Island Cotton. Sea Island cotton, grown by a farmer of Udipi in his backyard, was sown early in July 1947 in the Agricultural Research Stations at Pattambi and Taliparamba in Malabar and Nileshwar and Kankanadi in South Kanara District. Harvests were completed by October and November and the plants were ratooned in May 1948, leaving a stump of 9" from the ground. These ratooned plants put forth quick vigorous shoots, grew to a height of 2½' to 3½' and bore on an average of 25 bolls, yielding 2½ to 3½ ozs. of kapas per plant. The opening of bolls, was very satisfactory and the quality of cotton was fine, strong with a staple length of 1·56".

Harvest of Sugarcane. The determination of total solids in the sugarcane juice by a simple Brixometer, giving an index of sucrose per cent in the juice, can be done by any sugar cane grower. In the case of a variety like Co. 419, the maximum Brix's reading would vary from 20 to 22 per cent, depending on the season and soil conditions. If mature cane is to be tested by trial boiling of the cane juice, Co. 419 may be considered to be mature, when the recovery of the jaggery is 12 per cent of the cane weight. Ordinarily, the age of the crop would give reliable index of the maturity of the cane. Co. 419, which is largely cultivated in this province, would be mature, if harvested when it is 11½ months from the date of planting if the planting was between February and April; but in a crop planted in June, maturity is attained in 10½ months.

Plio Film. Plio film, a synthetic plastic product looking like glassine paper. affords proof against moisture and high permeability to carbon-di-oxide. Trial with this new wrapper has given very promising indications of assisting the fruits to remain in a better state of preservation than that left untreated i. e. for two to three weeks.

Education in Agriculture. In the re-organised scheme of secondary education, agriculture and gardening has been prescribed as one of the subjects for vocational courses of study from forms IV to VI. One of the schools that has adopted agriculture both as craft and as a vocational course of study is the Sivaswamy Iyer High School, Tirukattupalli, Tanjore where about 40 pupils are taking instruction in agriculture. About 30 acres of poramboke was alienated by the Government and it was made fit for cropping by the school authorities, with the help of modern mechanical equipment. About 20 acres have been planted with paddy and 7 acres have been reserved for horticulture.

Campaign against Insects. Conservation of the enormous stock of food grains against the insect hordes has ceased to be a problem by a judicious use of Gammexane and D. D. T. dusts. In the field, Gammexane D. 025 literally decimates serious insect pests like grasshoppers on paddy and sugarcane, the rice bug, the cholam earhead bug, the sugarcane fly, flea beetles, termites and a host of other insects. D. D. T. appears to

have a more or less specific action against leaf eating grubs, termites and a variety of household and livestock pests. Two pounds of D. D. T. 550 wettable powder, mixed in 100 gallons of water, will be enough to spray an acre of paddy infested with paddy jassid. The annihilation of the pests sure in the course of three days and the cost works out at about Rs. 6/- per acre.

Sorghum Earhead Bug. The experience at the Agricultural Research Station, Siruguppa, shows that if D. D. T. wettable powder is mixed with water and sprayed at 1 per cent strength, with the help of an ex-A. R. P. stirrup pump fitted with a nostle, when the Sorghum crop is in the short blade stage, the ill-effects of the Sorghum earhead bug are got over.

Cattle Vaccination. The results of Brucellosis Vaccinations conducted during 1945 in a herd at Sethumadai of Coimbatore district were successful. The protected heifers had conceived and calved normally, and none of them aborted, fresh tests were made with 161 samples or sera from the same village of which 29 proved positive.

Immunity against Rinderpest. The Hon'ble Dr. S. Gurubatham Minister for Firka Development and Prohibition, inaugurated on December 12, 1948 at Penduriti, Vizagapatam district, a campaign of mass inoculation against rinderpest. The Hon'ble Minister personally inoculated the first pair of bullocks, which were brought there, for immunity against rinderpest.

February 1949.

Agricultural Prospects Brighter than ever. Several Agricultural problems of vital nature, that are likely to be faced, when the Tungabadra Project comes into operation, are being studied at the Irrigation Research Station, Siruguppa.

A good portion of the project area is made up of deep black soil and the tract, in general, receives low and uncertain rainfall.

It has now been established, that no harm will result to the black soil due to irrigation with Tungabadra river water by rise of harmful salts. It is also interesting to note that as a result of timely irrigation with adequate manuring, yields of crops appreciate many fold compared to yields of crops depending solely on the uncertain and untimely rainfall. Figures given below need no comment, and speak for themselves, as to the great potentiality of the famine areas of the Ceded District coming under the Project.

	Jonna (Sorghum)		*Cotton*
	Grain	Straw	Kappas.
Rainfed ...	401	981	387
Irrigated ...	450	1387	367
Irrigated & manured ...	2244	7106	672 (SON)
Irrigated no-manure (60—N) ...	913	5300	290

An Improved Bunch Type of Groundnut in Sight. The popular bunch variety of groundnut extensively cultivated in the Guntur and the Pollachi areas of this Province has one great drawback. Rains during harvest result in a good portion of the nuts germinating in the field itself due to non-dormant habit and entail loss to growers and affect the quality of the produce. This problem has been under study by the Oilseed Specialist. The high yielding hybrid culture A. H. 6481 does germinate not even, if the weather is wet during harvest. It will soon go through large scale trial in the district before release for general distribution.

Setting in Plum Orchards Solved. At the Pomological Station, Coonoor setting of plum trees, Shiro, being a self infertile variety is usually very poor. It had unusually a good crop in 1948 for the first time. This is attributed to the fact that another new variety from Kotagiri planted in between the rows of Shiro four years back flowered for the first time. It is found that the new variety of plum inter-planted proved a good polliniser for Shiro. Grafts of the new variety are being multiplied for large scale distribution for inter-planting in gardens planted with Shiro and securing regularly a good crop of plums.

A Sceptic Fruit Nursery—Man Converted to the Correct method of Propagation of Fruit Plants. In 1944 a nursery man in Srirangam has been following the whip-cum-inarching method for securing mango graft on a large scale. It was suggested to him to either prefer inarching or alternatively the root stocks might be lopped 4″—6″ above the graft joints at the time of grafting. For the past two years, he had taken up the latter suggestion with profit and has been successfully raising hundreds of grafts, as it contributed to a high "take".

An Improved Strain of "Budama" (Cucumis Trigondus) A-18 of Nandyal. In the Nandyal Valley of the Kurnool District, a vegetable locality known as BUDAMA (a variety belonging to the cucumber family) is a regular mixture, with Korra (Tenai, Setaria Italica) and Red Gram, in dry lands at the rate of half to one ounce of seed per acre. It matures in three months and an average of 500 lb. of ripe fruits are gathered per acre. It is usually cut out into chips and dehydrated in the sun for use as a vegetable during summer. A slection in this variety named A. 18 with eliptical fruits of scarlet yellow colour has been isolated for distribution.

Propagation of Jak Made Easy. Propagation of Jak through seed is not only a slow method, but the plants do not also turn to be true to the parental characters. Experiments at the Fruit Research Station, Kallar have shown that Jak could be easily propageted by grafting. It will therefore be a quick method of propagating on a large scale Jak varieties which are known to possess very desirable characters for yield, quality of fruit etc. The fruit section will be highly thankful to people who will communicate the location of such special varieties.

A Rare Type of Ragi. The grain of the finger millet (Ragi – *Eleusine Coracana*) is brown in colour. A new type with white grain was discovered at the Millet Breeding Station, Coimbatore. It contains twice as much protein and 50% more vitamin than the brown ragi under cultivation. But as ill luck would have it, it is poor in yield. Research work is in progress at the Millets Breeding Station, Coimbatore through hybridisation to build up brown ragi rich in proteins and vitamin.

Measures to check rust Disease in Tenai. Rust is a serious disease that often attacks the Italian Millet. This is spotted out by the characteristic brown rusty spots on the leaves. In certain adverse seasons, the disease assumes an epidemic form and results in a severe loss to the farmers. Extensive survey of the varieties cultivated in various tracts of the Province was undertaken and a larger collection made. During the course of the intensive study of these materials, a type least susceptible to the disease and recording fairly high yield has been isolated. It is under yield test.

On the way to check striga - a root Parasite on Sorghum. Striga (Sudumali or Malli) is a flowering root parasite on many cereals. Sorghum is highly susceptible to it. The parasite attaches itself to the root of the Sorghum plants and sucks the nutrients going up to the formation of grains on the ear head. It therefore results in a low yield. Sometimes the Sorghum plant dies when a number of striga plants attaches itself to the host.

An African type of Sorghum resistant to this pernicious parasite has been isolated at the Millets Breeding Station. But to our disappointment, the grain of the resistant type is unpalatable. So a programme of hybridisation between the resistant type and the local cholam varieties has been put into execution and selections combining the desirable qualities of the local varieties and the resistant character of the African type are being tested.

Glut in the fruit market and unsalable fruits need not worry the orchardists. A heavy crop of fruit often results in a glut in the consuming markets. Naturally the prices offered to the grower are low. This a part, a good portion of the harvest does not often come to the grade standards or cannot be quickly marketed.

All these wastes can be turned to good profit if side by side a fruit canning and preservation unit is set up as a side cottage industry to an orchard or groups of orchards in fruit producing centres.

At the Government Fruit Products Research Laboratory, Kodur, Cuddapah District, a three months practical training is given in upto-date fruit canning and preservation methods to students of S. S. L. C.

standard. Fruit products like Orange, Lime and Lemon squashes, Lime juice, Cordials, Fruit Jams, Jellies and Marmalades of excellent quality are now produced at Kodur. Why then the orchardists should hesitate to take advantage of the Institution ?

Choose intelligently Plants for your orchard. Twenty Himayuddin grafts supplied from Sugarcane Research Station, Anakapalle were planted in the year 1943 by Dr. Ramamurthy, Anakapalle in his garden at Kasimkota about three miles from Anakapalle, with a spacing of 40′ on either side in the squire system. The trees have started commercial yields since two years consequently and the yields of the trees have worked out to 250 to 300 fruits per tree. This is a striking departure in the general performance of most of the trees of the variety Himayuddin which are known to be shy bearers as a class. The importance of the selection of clones for orchards from the choice and selected type of parent tree is evident from this experience.

Nursery growers can economise. As a result of trials conducted at the Agricultural Research Station, Taliparamba, regarding the use of various containers for potting and despatching seedlings, coconut fibre containers have been found to be convenient and cheap. These are found to reduce the potting expenses by 50% when compared to bamboo pots and by 25% when compared to mud pots. In the despatch of plants, coconut husk containers hold three times more number of plants per basket when compared with mud pot containers and twice the number of plants when compared with bamboo containers. Plants potted in coconut husk containers stand transport better than those in bamboo or mud pots. Further, the damage to the grafts through whiteand is considerably minimised by using coconut husk containers for potting seedlings, grafts or budding.

An improved Fruit grading machine. A machine for grading tight jacket oranges designed by the Research Engineer and based on an old chinest design has for sometime past been fairly In common use. It was however felt that the high cost of this machine (Rs. 175-) placed it beyond the reach of many small scale fruit growers. Further research on this subject was made and an improved and cheap grader has now been designed. The new grader is made in two sizes, the smaller for grading limes and the larger for grading tight jacket oranges and lemons. The smaller size costs approximately Rs. 50- and the larger Rs. 120.

In the Chinest pattern, the fruits are transferred one stage to the next by means of a pedal to be operated once for each such transfer. Hence the process is not one of continuous grading.

In the new grader, the fruits are fed at one end and the grading takes place as they roll down a gradient, under the force of gravity.

The fruits are graded according to "Agmark" sizes. One boy operating this machine can grade from six to seven thousand fruits in one hour. Fruits are neither crushed nor damaged in the process.

Visual Education of Farmers in Improved Methods of Agriculture. Regular tours are organised for farmers selected from the various parts of the districts and taken to the different Agricultural Research Stations to educate them on the latest methods pursued to increase the yields of various crops and also to acquaint themselves with the latest improved agricultural implements. The tour usually covers a period of two weeks and the entire cost is borne by the Government.

Side lines of Farming for Profit and Pleasure. Bee-keeping is one of the side lines of farming which could be undertaken both for profit and pleasure by the agriculturist. A hive is capable of producing 8 to 10 lb. of honey per annum. The farmer can supplement his income by Rs. 24/- to Rs. 30/- per hive. East Godavari District in this Province has maximum number of hives numbering over 1,200 maintained exclusively by the cultivators. A Bee-Keepers Co-operative Society is also functioning at Pithapuram which helps in the marketing of honey. The industry is getting popular among the agriculturists in that district. Farmers in other districts may follow this with profit.

"Korai Weed" can be kept under Check. Korai (*Cyperus rotundus*) is a pernicious weed in almost all the red and sandy soils. It gets naturally propagated by nuts which develop in the soils. The nuts contain the nutrients required for the growth of the grass and shoots come out from each of them when conditions are favourable. In an experiment conducted at the Central Agricultural Research Station, Coimbatore, it was found that the nuts are developed mostly within two feet depth of the soil. When the field is cultivated once in a fortnight during the fallow period either with Guntaka or with a plough, the weed is kept in check and the subsequent crop raised in the monsoon is not infested so much as in the case of the uncultivated plot. Cultivators are therefore advised to plough the field soon after the harvest of a crop and work a Guntaka or a cultivator once in a fortnight during the fallow period. Since a Guntaka can cover 3 to 4 acres in a day, it will be economical to work this implement.