4. There are indications that a higher concentration of CMU might prove more effective and also that a lower dosage TCA would be sufficient to control Kikuyu grass on the Nilgiris.

REFERENCES

1.	Allen, H. P. and D. W. Bohmont	1956	Down to Earth. 11, p. 10.
2.	Carder, A. C.	1950	Proc. 4th West. Candian Weed Control Conference, Saskatchewan.
3.	Knowles, G.	1952	Proc. 5th Meeting. East Section Net. Weed Conference, Quebec.
4.	Lachman, W. H.	1952	Proc. 6th Annual Meeting N. E. Weed Control Conference, New York.
5.	McCall, G. L.	1952	Agricultural Chemicals, 7. p. 5.
6.	Orsenigo, J. R. and O. Smith	1953	Proc. 7th N. E. Weed Control Conference.
7.	Shaw, W.	1954	Proc. British Weed Control Conference Vol. I. p. 35.
8.	Southwick, L.	1957	Down to Earth, 13. p. 16.

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Cultivation of Irrigated Summer Cambodia and Suggestions for Improvement

by

L. NEELAKANTAN,
Cotton Specialist,
Agricultural College & Research Institute, Coimbatore.

Introduction : With the commencement of summer i. e. February –March, what corresponds to the *Masipattam* in the Tamil agricultural calender, large areas - about 74,000 acres - are cultivated annually, with an American variety of cotton, popularly known as Uganda or Rajapalayam - *G. hirsutum*. The districts concerned are Ramanathapuram, Tirunelveli and parts of South Arcot in the order of importance. The strain that is recommended for this zone of growth by the Agriculture Department is called MCU. 2 (Madras Cambodia Uganda - 2). It is one of the best quality long staple cottons in India. Though this strain has almost covered the entire area, the method of cultivation varies from place to place giving scope for improvement. In this brief article the average cultivation cost and

income per acre based on enquiries on three average holdings are furnished, together with suggestions by adopting which the cost can be reduced and the income enhanced.

Cost and income per acre (average of three holdings) :

(a) *Expenditure :*

Head of Account.		Rs.	nP.
Preparatory cultivation (three ploughings)	...	25	25
Manures and manuring	...	46	46
Seeds and sowing	...	5	61
Irrigation -	...	42	25
After cultivation	...	21	57
Harvesting	...	48	36
Misellaneous	...	22	75
Total	...	212	25

(b) *Receipts :*

Yield	...	1060 lb. of kapas		
Valuation at Rs. 150/- a 'pothi' of 336 lb. of kapas	...	Rs.	473	20
Deduct cultivation cost	...	Rs.	212	25
Net income	...	Rs.	260	95

Suggestions for reducing cost and raising income.

Preparatory Cultivation : The item that requires improvement is in regard to final preparation for sowing. After the third ploughing instead of forming beds and channels, the field can be thrown into ridges and furrows 2½ feet apart. The labour utilised for breaking up clods in final operation can be reduced by one or two and utilised for this operation. This requires some skill in working with the *mammutty*. Therefore, wherever possible a ridge plough can be used to reduce costs. Line sowing has advantages; it secures a saving in seed rate, ensures a better and uniform germination, assures an economic way of using irrigation water, and secures better facilities for weeding, plant protection and harvest operations.

Manures and Manuring: Farm yard manure at five cartloads or sheep penning (800 to 1000 per acre) is generally adopted. This practice should become universal and wherever possible the quantity of basal dressing of Farm Yard Manure or compost can be raised to 10 cartloads per acre. Ammonium sulphate is also given as a top dressing at 100 lb. to the acre and that in one dose i. e. between the 40th and 45th day after sowing. It is preferable to use this in two doses, half just before planting time and the second 35 to 40 days after planting.

Seeds and Sowing: Seed is generally broadcast and covered with the country plough. This can be improved by dibbling the seeds 6" apart on the sides of ridges spaced 2½ feet apart. With this method 15 lb. of seed is enough whereas when broadcast 25 lb. of seed may be required.

Before sowing, the seed may be soaked for 4 to 6 hours in water, water drained off and the soaked seeds rolled in a paste made of water and cowdung or earth. After this treatment the seed is well mixed with Agrosan G. N. at 1 oz. for every 15 lb. of seed and dried. This does not cost more than 4 annas and this treatment gives protection to the germinating seeds and the seedlings against soil borne diseases and black-arm.

Where skilled labour and facilities are available the fuzz on the seed can be removed by treating the seed with con. sulphuric acid at 1½ lb. for 15 lb. seed (This may cost 6 to 8 annas more).

After Cultivation: With the adoption of line sowing, it should be possible to dispense with manual labour for weeding and earthing up operations. Plant Junior Bullock hoes and doule mould ploughs may be used with advantage for all interculture operations.

Irrigation: The cheapest is gravitation irrigation. Mhote irrigation with wells in regions where tanks are not available can be replaced by electrically operated pump sets. One important principle is that irrigation is to be given at 10 to 15 days interval during pre-flowering phase, but during flowering and tender boll stage it should be more frequent say, at weekly intervals and again as the fruits reach maturity and bursting stages, irrigation may be at longer intervals.

Plant Protection: Common pests are leaf roller, jassid and boll worm. Common disease is black-arm. These can be controlled by adopting the following schedule.

Endrin may be sprayed at 1 oz. in 6 gallons of water when the crop is a month old. This is for checking jassid and other insects.

A second spraying may be done with a combination of 4 oz. folidol, 1 lb. of any copper oxychloride fungicide like 'cuprayit', 'Shell copper' etc. in 40 gallons of water. This is to check boll worm and other insects and for controlling black-arm. This may be done when the crop is about 2 months old.

The combined spray may be repeated when the crop is 3 months old.

By this time most of the pests and diseases would have been controlled. Should they persist, a fourth round (combination again) may be given if absolutely necessary.

Harvests: It is very essential that kapas are gathered from well burst bolls and that in the cool hours of the day. By so doing trash may be eliminated. Let ths harvests be frequent to avoid over exposure in the field with attendant risks of dust accumulation, soiling by rain splash and possible stealing. As far as possible it is desirable that bad kapas are separated from good produce even during harvest as otherwise boll worms that are more in bad locks may have access to good locks which get affected as a consequence. The produce may be dried to remove dampness and stored in a dry cool place till required for ginning.

Conclution: By adopting all the improvements it is possible to raise the yield of seed cotton by 50 to 100 lb. per acre.

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