

DEPARTMENTAL NOTES

A NOTE ON THE CULTIVATION OF THE CAULIFLOWER IN THE DRY ZONE OF CEYLON

E. S. de S. JAYASUNDERA, Dip. Agric. (Poona),
MANAGER, EXPERIMENT STATION, ANURADHAPURA.

IN Ceylon the cultivation of cauliflowers is generally confined to the higher elevations, although the crop has been grown successfully in the low-country wet zone. Recently attempts have been made to grow cauliflowers in the dry zone and trials carried out at the Experiment Station, Anuradhapura, during the last three years, have indicated that they can be grown with some success and that they give promise of becoming a useful market garden crop in that locality.

Trials were carried out at the Experiment Station, Anuradhapura, for the first time during *maha*, 1935-36, with certain strains that were reported to be acclimatized in India. The results were encouraging and a further trial was carried out during *maha*, 1936-37, with the variety that had given best results in the previous season. Owing to the excessive rainfall that year, however, the results were poor and many plants were killed out by the disease caused by *Bacillus carotovorus* which is associated with wet weather. The trials were repeated during *maha*, 1937-38, with considerable success. The varieties tried out were :—

- (1) Early Patna
- (2) Main-crop Patna
- (3) Early Market
- (4) Late Patna

Of these varieties Early Patna has definitely proved to be superior to the other varieties under Anuradhapura conditions. Main-crop Patna never formed satisfactory heads and Early Market was a very poor variety in regard to yield. The following

table shows the varieties cultivated in the three seasons with their yields :—

Season.	Variety.	Area.	Yield per Plot.		Yield per Acre.	
			No. of Heads.	Weight. lb. oz.	No. of Heads.	lb.
Maha, 1935-36	Early Patna	.. 1/25th acre ..	205..	79·06..	5,125..	1,985
Do.	.. Main-crop Patna	.. do. ..	129..	55·03..	3,225..	1,380
Do.	.. Early Market	.. do. ..	124..	53·03..	3,100..	1,330
Maha, 1936-37	Early Patna	.. 1/16th acre ..	160..	68·02..	2,560..	1,090*
Maha, 1937-38	Early Patna	.. do. ..	497..	213·08..	7,952..	3,416
Do.	.. Late Patna	.. do. ..	284..	102·04..	4,544..	1,636

METHOD OF CULTIVATION

The seed rate is 4 to 6 ounces of seed per acre. An ounce of seed will produce 2,000-3,000 plants.

Source of Seed.—In the dry zone it has been found that plants do not set seed and, until a method of inducing plants to seed is discovered, supplies of seed will have to be obtained from commercial seedsmen in India. The average price of an ounce of seed is Rs. 2, the price varying with different seedsmen.

Seed Bed.—The seed should be sown in a well prepared nursery bed in an open and sunny situation. Sowing the seed must be done thinly otherwise the seedlings are too close and crowded and result in weak and spindly plants. It is preferable to sow the seed thinly at first and then transplant them after about 7-10 days to another well prepared bed, although the second transplanting is not absolutely necessary. Sowing done late in the evening gives best results. The seed is mixed with ash and sown thinly in the nursery and then covered over with a thin layer of light sifted soil and gently watered and pressed down. The bed should next be covered lightly with a thin layer of straw. On the third evening after sowing the straw should be removed gently without injuring the seedlings. During the trials the effects of shading and exposing the nursery beds after the thin cover of straw was removed were tested and it was found that the seedlings that were in the exposed beds suffered no ill-effects and that these seedlings withstood transplanting better than the seedlings grown under the shade.

Transplanting.—When the plants have attained a height of six to eight inches and are about 4 to 4½ weeks old, they should be transplanted into well prepared and manured beds at a distance of 1½ by 1½ feet apart, taking care not to transplant the seedlings too deeply. Only strong healthy seedlings should be used in planting out. Transplanting is best done on a cloudy day. Otherwise the operation should always be done

* Poor yield due to disease as a result of excessive rain. The cauliflowers found a ready local sale at 15 cents a lb.

somewhat late in the evening and the seedlings shaded with the branches of small leaves that do not drop too soon. Margosa leaves (*Azadirachta indica*) serve this purpose well. After transplanting, the beds should be watered in the evenings if there is no rain. The soil should be loamy and capable of easy drainage.

Manuring.—Manuring is essential if good results are to be obtained. A few weeks before planting out the seedlings, well rotted cattle manure at the rate of 20 cart loads per acre should be applied and the manure forked in. About a month after transplanting the following fertilizer mixture may be applied with advantage.

		Per Acre.
		Cwt.
Sulphate of Ammonia	..	1
Super Phosphate	..	2
Sulphate of Potash	..	1

Cultivation.—Frequent cultivation is necessary and the beds should always be kept loose and friable and quite clean to keep off insect pests. Earthing up of plants is very necessary from a week from transplanting until the heads begin to form. When the heads begin to form about three or four leaves should be gathered and tied over them so as to increase the white colour desired in them. If this is not done heads turn a sickly yellow colour and such heads do not find a ready market. The formation of the heads takes place very irregularly from about 7 to 8 weeks from sowing, but good heads will appear from about 9 to 12 weeks from sowing. Heads should be cut when ready, for, if they are out too late, the quality is affected: some heads become badly spread while others develop unsightly blemishes with dark pin points.

Time of Planting.—Nurseries for the north-east monsoon are best prepared in early October and transplanting carried out in late November after the heavy rains have passed.

PESTS AND DISEASES

Cauliflowers are very liable to attack of insect pests and unless these can be controlled, the crops may become a failure. The pests that have proved troublesome are:—

- (1) *Prodenia litura*, a leaf eating caterpillar.
- (2) *Bagrada picta*, the common mustard bug also known as the painted bug.
- (3) *Crocidolomia binotalis*.
- (4) Fly maggot (*Agromyza* sp.).

Of the above the most troublesome of all is the bug *Bagrada picta* which sucks the juice from the leaves and even attacks the heads when formed. Hand collection at the very beginning is very effective or spraying the beds with Nicotine Sulphate $\frac{1}{2}$ oz. and soft soap $\frac{1}{2}$ oz. in a gallon of water. The spraying should be thorough and should be done early in the morning when the bugs are most active.

The next important and troublesome pest is the Fly maggot (*Agromyza* Sp.) which tunnels a spiral gallery down the stem causing some of the leaves to wilt when the gallery cuts across the base of leaf stalk. This pest is difficult to control because its presence cannot be detected until leaves begin to wilt for no apparent reason. This pest has not been very serious. The other pests are leaf eating Caterpillars which are not troublesome and can be controlled in the early stages by spraying plants with Lead Arsenate 1 oz. in 2 gallons of water, spraying being done in the early morning.

Diseases.—The only disease which was troublesome was *Bacillus carotovorus*. This disease makes its appearance when very wet weather conditions prevail, otherwise the disease is not troublesome.