ADLAY AS A WEED OF PADDY FIELDS

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ADLAY is the common name of a grass, *Coix lachryma—Jobi* L., which produces edible seeds ; it is also called Job's tears, presumably from the shape of the seeds. It is fairly extensively cultivated, though not intensively, except perhaps in the Philippines, where it was popularized by the Department of Agriculture ; elsewhere it is grown as an auxiliary foodcrop, or it may be grown in place of rice in seasons when successful paddy cultivation is uncertain.

Adlay is a fairly recent introduction to Ceylon, but there is an indigenous species of Coix, *C. gigantea* Koen., which occurs fairly commonly in and near paddy fields in the Kurunegala, Ambepussa, and Veyangoda districts, but which shows no sign of being a pest. The cultivated species is occasionally found growing among other crops, and, when its cultivation was undertaken experimentally by the department, fears were expressed that it might be a potential danger as a weed, particularly in paddy fields. Accordingly, experiments were devised to measure the degree of possibility of its becoming a pest.

Two plots on the paddy area of the Experiment Station, Peradeniya, were sown according to the following planting programme. Both plots were sown twice a year with paddy. In one, adlay was introduced in the *maha* season, by mixing seed of adlay with the paddy seed before sowing the plot ; in the other, the adlay was introduced in the *yala* season by the same method. Each plot was divided into two equal parts ; in one, the adlay seed was introduced with the paddy in the first season only, and thereafter the plot was sown with pure paddy, and in the other adlay was reintroduced every *maha* or *yala* season, as the case may be. Whenever adlay was sown with the paddy, the mixture

was in the proportion of one pound adlay to 4 pounds paddy, *i.e.*, 20 per cent. adlay. This planting programme was designed to cover all possibilities; for example, adlay may mature in the same period of time as either but not both the varieties of paddy grown during the two seasons, and it should, therefore, be introduced in either season; it may be harvested with the paddy or it may drop its seed before the paddy is ripe—sowing it only once will tell us what happens in those fields where the cultivator is careful to winnow his seed before sowing it and where the danger comes only from seed that has been shed. Sowing it repeatedly will tell us what is the result of taking no precautions to clean the paddy used for sowing, and thereby running the risk of reintroducing weed seeds. The proportion of adlay seed is perhaps high in this last treatment, but it could be modified subsequently if necessary.

At harvest, the whole plot was harvested together, and the adlay seed was winnowed out and weighed. The results are given in tabular form in the table accompanying this note, where the figures show the percentage by weight of adlay in the paddy crop.

It is quite clear that there is no danger from adlay as a weed of paddy fields, at least under Peradeniya conditions. The *yala* figures are not satisfactory, because it so happened that the plots used for this experiment were the only ones cultivated for the *yala* season in the block of paddy fields in which they stood, and in consequence of the attack of birds, field mice, and paddy flies yields were very poor. Nevertheless, conditions were normal during the *maha* season, and the results from the two seasons are essentially similar.

In all seasons, the growth of the adlay was slower than that of the paddy; measurements of height were made at monthly intervals, and showed that the adlay plants were always a half to two-thirds of the height of the paddy plants. They were easily distinguished from the paddy by their broader leaves and lighter colour. In the *maha* season, the adlay flowered first, taking an average of 113 days against the 135 of the paddy; the plots were harvested when the paddy was mature, but no great amount of adlay seed appears to have been shed; at any rate, no plants appeared in the interval between the two seasons, nor when the fields were flooded in preparation for the next season's cultivation. In the *yala* season, the adlay flowered later than the paddy, requiring 136 days against the 102 of the paddy, and when the paddy was harvested, the adlay seeds were still immature. Indeed, many of the adlay plants had not even flowered at the time of harvest.

SUMMARY OF RESULTS.

Season	Adlay sown during *maha* Season (Plot 1).				Adlay sown during *yala* Season (Plot 2).			
	Adlay sown once only (A)		Adlay sown each year (B)		Adlay sown once only (A)		Adlay sown each year (B)	
	Treatment	%	Treatment	%	Treatment	%	Treatment	%
Maha 1937–38.	Mawi and Adlay	0·045	Mawi and Adlay	0·045	Mawi only	—	Mawi only	—
Yala 1938 ..	Heenati only	0·	Heenati only	0·	Heenati and Adlay	0·585	Heenati and Adlay	0·
Maha 1938–39.	Mawi only	0·	Mawi and Adlay	0·009	Mawi only	0·	Mawi only	0·
Yala 1939 ..	Heenati only	0·	Heenati only	0·	Heenati only	0·	Heenati and Adlay	0·