

PERFORMANCE OF *CASSIA TORA*—A RAINY SEASON WEED AROUND ALIGARH*

P. R. KHAN, A. Z. AMANI, S. H. ZAIDI, A. U. KHAN AND A. K. M. GHOUSE

Department of Botany, Aligarh Muslim University, Aligarh

ABSTRACT

Cassia tora—a common rainy season weed usually grows in huge colonies in and around Aligarh. The different localities selected for the present study varied in its soil type and water content. Based on these two variables, the localities were named as Humid, Mesic, Shaded and Arid. The performance of this weed was observed in terms of its vegetative and reproductive growth. It was found that the weed's performance on the whole (vegetative as well as reproductive phases) was excellent in Mesic condition, however, under shaded/protected area the vegetative growth was best where as reproductive growth was found to be poorest.

INTRODUCTION

Cassia tora—a common rainy season weed usually grows in huge colonies. In a recent communication (AMANI *et al.*, 1977), an attempt was made to evaluate the success of this weed under two different environmental set-up in terms of its vegetative and reproductive phases. It was found out that the weed grows vigorously under stress of acute environmental hazard. Recently, a general survey of the areas inhabited by this species has revealed that not only the weed performs differently in different environments, but it grows with varying degrees of vigour at different places in a single environmental set-up. This unusual pattern of growth led us to make an investigation on the performance of this weed in and around Aligarh.

MATERIAL AND METHODS

The different localities selected for the present study varied in its soil types and water content. Based on these two variables, a geographical mapping of the areas was done and named as Humid, Mesic, Shaded/Protected and Arid localities. About 75 to 100 plants with their soil were uprooted from each locality. The amount of water in the soil and its pH were recorded. Length/width ratio of leaf, size/weight ratio of whole plant, size/weight ratio of shoot, root and shoot/root ratio with reference to size and weight were recorded separately for each locality. In the same manner, average number of fruits per plant and size/weight ratio of fruits were also calculated. The data were processed and summarized in Table 1.

OBSERVATION

The data thus obtained show following interesting results :

- (1) *Cassia-tora* does very well under shaded/protected areas as far as its vegetative phase is concerned. Whereas under Mesic condition, it performs comparatively poorer.
- (2) The reproductive growth is found to be poorest under shaded/protected area but in Mesic condition, it is excellent.

*Paper presented at the Second Indian Geophytological Conference, Lucknow, March 11-12, 1978.

Table-1—Productivity of *Cassia tora* around Aligarh

Traits	Shaded	Mesic	Humid	Arid
L/W ratio of leaf	1.836	1.739	1.708	1.687
S/W ratio of whole Plant	2.343	1.049	0.812	1.475
S/W ratio of shoot	3.654	1.752	0.778	1.847
S/W ratio of Root	10.6	5.6	5.1	6.1
Shoot/Root Ratio (Size)	2.896	2.515	2.235	2.575
Shoot/Root Ratio (Weight)	8.400	8.000	6.356	7.875
S/W ratio of fruit	16.108	27.827	24.564	22.595
Number of fruits per plant	16	35	27	20

(3) Considering the performance in terms of total productivity (vegetative and reproductive phases) it is inferred that this weed succeeds excellently in Mesic condition whereas it fails comparatively under Humid conditions.

DISCUSSION

Our data shows that *Cassia tora* growing well in all the four localities, shows a remarkable increase in reproductive growth under Mesic condition as compared to other locations. Further, it may also be inferred that in Mesic condition where water percentage is low and pH is high, the total performance in terms of productivity is much higher to those growing under Humid conditions where water percentage is very high and pH is comparatively lower. This behaviour of growth suggests that this weed can survive better in alkaline soil where water content is low.

REFERENCE

AMANI, A. Z., KHAN, P. R. & GHOSH, A. K. M. (1977). Performance of *Cassia tora*, under two different environmental set-up. *Fourth Annual Meeting, Society for Advancement of Botany, Varanasi.*