

LETTERS TO THE EDITOR

Effects of Orally Effective Hypoglycaemic Agents from Plants
on Alloxan Diabetes

SIR,—Five hypoglycaemic agents have so far been extracted by us from different plant sources, all of which are orally effective and are capable of reducing the blood sugar level of fasting as well as of glucose fed rabbits. The biological assay of these five products against tolbutamide as standard has been already reported (1961–62). The present communication describes the effects of three of these drugs on the blood sugar of alloxan diabetic rabbits.

Normal healthy rabbits weighing 2 kg. with fasting 18 hr. blood sugar levels of 100–125 mg./100 ml. were given intravenous injections of 180 mg./kg. of alloxan monohydrate in distilled water to make them moderately diabetic. After allowing 7 days for the fasting blood sugar levels to stabilise, the effects of oral administration of the drugs were observed in groups of 18 hr. fasted animals for a period of 4 hr. and the hypoglycaemic effects compared with that produced by tolbutamide, under similar conditions. Blood sugar was determined by the micromethod of Folin and Malmros (1929). The results are given in Table I and indicate the possibility of the extracts from *Ficus*

TABLE I

EFFECTS OF HYPOGLYCAEMIC AGENTS FROM PLANTS ON THE BLOOD SUGAR OF ALLOXAN
DIABETIC RABBITS COMPARED WITH TOLBUTAMIDE

Drug tested (dose/kg.)	Average blood sugar values for six rabbits (mg./100 ml.)					Max. fall in fasting blood sugar per cent
	Initial	1 hr.	2 hr.	3 hr.	4 hr.	
<i>Ficus bengalensis</i> stem bark (95 per cent ethanol) 1.25 g.	214.4	202.6	194.8	226.4	230.4	9.14 ± 1.1
<i>Ficus religiosa</i> root bark (water) 1.25 g.	181.9	186.9	211.0	154.22	152.2	15.22 ± 1.48
<i>Allium cepa</i> bulbs (light petroleum, 60–80°) 0.25 g.	179.08	143.7	158.8	179.08	172.32	19.76 ± 1.78
Tolbutamide (standard) 0.25 g.	180.3	151.2	128.4	132.4	133.5	28.78 ± 2.98
Distilled water (control) 10 ml.	190.4	196.9	186.3	188.4	194.0	2.20

bengalensis, *F. religiosa* and *Allium cepa*, being useful as substitutes for tolbutamide in controlling alloxan diabetes in rabbits.

Preliminary experiments in this laboratory have also indicated that neither tolbutamide nor the above three drugs are capable of reducing the fasting blood sugar level of completely depancreatized rabbits in 4 hr. after oral administration. The mechanism of action of these drugs may, therefore, be expected to be similar to that of tolbutamide.

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