Recent work by Jones (1981a,b) has shown that ruminal metabolism of mimosine and its derivative DHP differs in Hawaii from Australia. Whereas in N. Australia the feeding of high levels of leucaena to ruminants has resulted in toxicity characterised by hair loss, excessive salivation, loss of appetite, low liveweight gains, enlarged thyroid glands, low serum thyroxine levels and death of newborn animals, no such effects have been reported from Hawaii. Data from Queensland and Hawaii were compared. Urine DHP levels from goats or cattle fed leucaena in India, West Timor, Brazil, and Philippines have given low reading similar to Hawaii suggesting that differences are due to specific rumen microbes which may be absent from ruminants in temperate countries.

**Materials and Methods:**
A trial was carried out in Zanzibar to provide comparable data so that the likely toxic effects of feeding large quantities of leucaena (*Leucaena leucocephala* cv Cunningham and cv Peru) and another tree legume, *Gliricidia sepium* could be ascertained. Nine growing goats were divided into three groups of three and fed on diets of 100% signal grass (*Brachiaria decumbens*), gliricidia and leucaena (cv Peru) respectively. After only five days the diet of 100% gliricidia was discontinued, because the goats would not eat the feed, and substituted by 100% leucaena (cv Cunningham). The trial lasted for approximately sixty days beginning in March and finishing in May 1982. The daily fresh feed intake of the two groups on leucaena was approximately 10 kg of fresh leaves and twigs per group. Deaths occurred due to worms and pneumonia and unfortunately urine samples were lost due to logistical problems.

**Results:**
In spite of the deaths due to worms and pneumonia and the loss of urine samples, size and weight of thyroids were recorded (Table 1) and these allow some comparison with the data in Jones (1981b).

<table>
<thead>
<tr>
<th>Goat No.</th>
<th><em>Brachiaria decumbens</em></th>
<th><em>Leucaena cv Cunningham</em></th>
<th><em>Leucaena cv Peru</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyroid size (cm²)</td>
<td>1.3</td>
<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Thyroid wt (g)</td>
<td>0.89</td>
<td>0.89</td>
<td>1.1</td>
</tr>
</tbody>
</table>

[Table 1]
Thyroid weights for goats fed on 100% diet of Brachiaria decumbens are comparable with data given by Jones for tropical countries (eg. Hawaii) whereas the diet of 100% leucaena (cv Peru) has produced thyroids comparable with the Australian data (but referred to as a temperate area). There were no signs of hair loss or lesions in the oesophagus. Because of high mortality and loss of DHP data the trial will be repeated.

Reference:

Acknowledgement:
The assistance of Dr. K. Gharib in extracting the thyroids is acknowledged.