Abstracts
Acknowledgement i

Contents ii

List of abbreviations vi
List of figures vii
List of plates viii
List of tables ix
List of appendix x

1.0 Introduction 1

Literature review 2

2.1 Deer 2

2.2 General biology 5

2.3 Domestication of deer 6

2.4 Population of deer in Malaysia 7

2.4.1 Spesies of indigenous and exotic deer in Malaysia 9
2.4.2 Deer farming in Malaysia 9

2.5 Natural feed resources for deer in captivity 10

2.5.1 Grasses, creeping legumes and weeds 11
2.5.2 Browse plants 12

2.6 Nutrient contents of feeds: Proximate Analysis 12
2.6.1 Dry matter/moisture 12
2.6.2 Crude protein 12
2.6.3 Ether extract/Crude fat 13
2.6.4 Crude Fiber 13
2.6.5 Ash 14
2.6.6 Nitrogen free extract 14
2.6.7 Mineral 14

2.7 Anti – nutritional factors 16

2.7.1 Saponin 17
2.7.2 Terpenoid 17
2.7.3 Alkaloid 18

An evaluation of deer farming

3.1 Introduction 19

3.2 Govermental farms vs commercial farms 19

3.3 General Management 20

3.3.1 Fencing 20
3.3.2 Paddock 21
3.3.3 Feeding system 21
3.3.4 Stag to hind 22
3.3.5 Taming 22

Materials and Methods

4.1 Introduction 23

4.2 Collection and identification of plant material 23

4.3 Proximate analysis 23
4.3.1 Dry matter determination and storage of plant materials
4.3.2 Crude fibre determination
4.3.3 Crude fat/ether extract determination
4.3.4 Crude protein determination
4.3.5 Total ash determination
4.3.6 Nitrogen free extract determination

4.4 Principal of fibre analysis determination
4.4.1 Determination of neutral detergent fibre
4.4.2 Determination of acid detergent fibre
4.4.3 Determination of lignin

4.5 Determination of mineral contents in plants

4.6 The gas test method for Metabolizable Energy determination

4.7 Rumen simulation technique

4.8 Determination of anti-nutritional factor
4.8.1 Saponin
4.8.2 Terpenoid
4.8.3 Alkaloid

4.9 Statistical analysis

Results

5.1 Introduction

5.2 Plant selection

5.3 Chemical content of forages
5.3.1 Proximate analysis
5.3.2 Fiber component
5.3.3 Mineral
5.3.4 Metabolizable energy
5.3.5 Anti-nutritional value
## CONTENT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3.6 RUSITEC fermentation system</td>
<td>69</td>
</tr>
<tr>
<td>5.3.7 Statistical analysis</td>
<td>69</td>
</tr>
<tr>
<td>Discussion</td>
<td></td>
</tr>
<tr>
<td>6.1 Chemical composition</td>
<td></td>
</tr>
<tr>
<td>6.1.1 Proximate analysis</td>
<td>74</td>
</tr>
<tr>
<td>6.1.2 Mineral</td>
<td>76</td>
</tr>
<tr>
<td>6.1.3 Fiber composition</td>
<td>77</td>
</tr>
<tr>
<td>6.2 Plant selection</td>
<td>80</td>
</tr>
<tr>
<td>6.2.1 Browse plants</td>
<td>82</td>
</tr>
<tr>
<td>6.2.2 Shrubs legumes</td>
<td>85</td>
</tr>
<tr>
<td>6.2.3 Undergrowth (weeds)</td>
<td>88</td>
</tr>
<tr>
<td>6.2.4 Grasses</td>
<td>90</td>
</tr>
<tr>
<td>6.3 In Vitro Methods: Estimation of ME contents and DM digestibilities</td>
<td>93</td>
</tr>
<tr>
<td>6.3.1 Metabolizable energy</td>
<td>93</td>
</tr>
<tr>
<td>6.3.2 Rusitec fermentation system</td>
<td>94</td>
</tr>
<tr>
<td>6.4 Anti – nutritional Factors (ANF)</td>
<td>96</td>
</tr>
<tr>
<td>7.0 Conclusion</td>
<td>100</td>
</tr>
</tbody>
</table>

References

Appendices