

# **SOME PASTURE and BROWSE LEGUMES for ACID SOILS in the WETTER PARTS of the CARIBBEAN**

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All tropical grasses suffer from the same problem: during the dry season, after flowering has taken place, their nutritive quality falls to such low levels that animals grazing them alone, without access to any form of supplement, cannot even maintain their own body weight, much less gain weight or produce milk. This seasonal problem can be overcome by the use of expensive concentrates, but a cheaper alternative is the use of well-adapted, persistent and productive forage legumes in the pastures.

Until recently, suitable legumes were not available for very acid, infertile tropical soils, but the work of scientists, particularly in South America, has now identified several species that can be grown on the poorer, acid soils in the Caribbean. This factsheet describes the agronomic characteristics of several important legumes. They are listed in two categories - firstly the climbing or trailing types that grow in association with grasses to produce mixed pastures, and secondly the more erect or shrubby types that can be browsed, particularly as protein banks, when reserved for use only in the dry season.

# Important Agronomic Characteristics of Pasture and

Species	Growth habit	Rainfall requirement (mm/year)	Drought tolerance	Flood tolerance	Recommended soil type	Fertilizer requirement	Compatibility with grasses	St
<b>A. PASTURE LEGUMES</b>								
<i>Canavalia ensiformis</i>	Trailing	2,000+	Good	Good	Low fertility	None	Good	N
<i>Centrosema</i> species	Trailing	800+	Good	Variable	Acid, infertile	Relatively high	Good	G
<i>Desmodium ovalifolium</i>	Trailing	1,000+	V. Good	Fair	V. Acid, infertile	Sulphur (to improve palatability)	Good	St
<i>Macroptilium atropurpureum</i>	Trailing	800-1,600	V. Good	Poor	Acid to neutral, well drained	Low	Good	N
<i>Pueraria phaseoloides</i>	Trailing	1,400+	Fair	Good	Acid, infertile	None	Good	N
<i>Stylosanthes capitata</i>	Erect	800-1,600	V. Good	Poor	Acid, well drained	Low	Good with erect grasses	S
<i>Stylosanthes guianensis</i>	Erect	900+	V. Good	Fair	Acid, infertile	None	Good with erect grasses	N
<i>Stylosanthes hamata</i> Verano	Erect	700-1,400	V. Good	Poor	Moderately acid, well drained	Low	Good with erect grasses	N
<i>Zornia latifolia</i>	Semi-prostrate	1,000+	Good	Fair	Acid, infertile	Low	Good	S
<b>B. BROWSE LEGUMES</b>								
<i>Desmanthus virgatus</i>	Small shrub	1,000+	V. Good	Poor	Moderately acid, light sands	Low	Good with short grasses	N
<i>Desmodium distortum</i>	Shrub	1,500+	Good	Good	Highly to moderately acid	None	Fair with most grasses	N
<i>Desmodium gyroides</i>	Small shrub	1,000+	Good	V. Good	Acid, infertile	Low	Good with short gra	N
<i>Gliricidia sepium</i>	Small tree	1,500+	Good	V. Good	Moderately acid	None	Good	N

# Browse Legumes for Acid Soils in the Caribbean

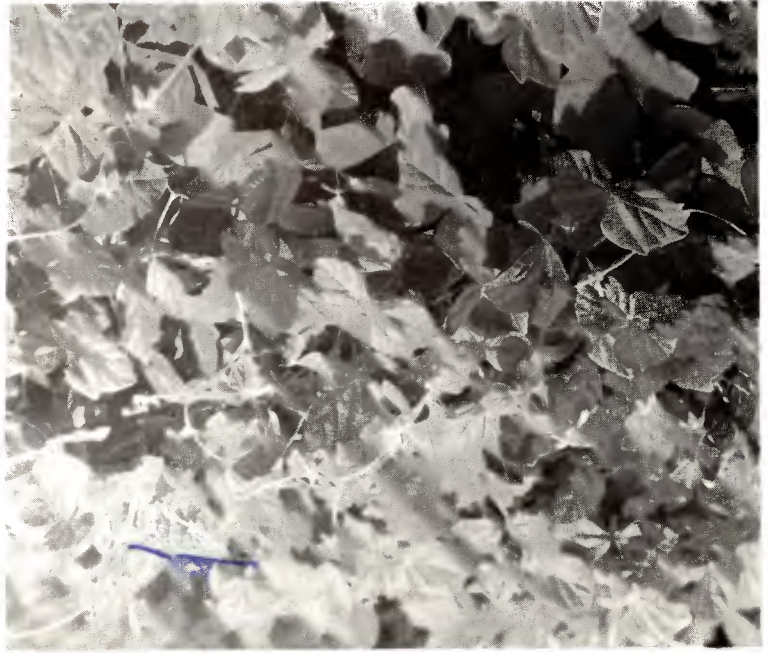
<i>Seed sodolucation requirement</i>	<i>Seed scarification requirement</i>	<i>Seeding rate (kg/ha)</i>	<i>Tolerance of weeds</i>	<i>Recommended grazing management</i>	<i>Typical dry matter yields t/ha</i>	<i>Major pests and diseases</i>	<i>Major advantages</i>	<i>Major disadvantages</i>
None	None	50	Good	Lenient	18-23	Few problems	Highly versatile	Low palatability; poor feeding quality
Generally none	None	4	Good	Lenient	2-5	Insects; leaf spots	Productive in dry season; high feed- ing quality	Needs fertile soils; susceptible to in- sects and diseases
Specific	Light	2	Fair	Heavy	3-6	Nematodes; False rust	Withstands heavy grazing, poor soils	Low palatability
None	None	4	Good	Rotational	3-8	Rhizoctonia	Drought tolerant; versatile	At high stocking rates, needs rest periods
None	None	5	V. Good	Lenient	4-9	Few problems	Tolerates water- logging	Sheds leaves in dry season; sometimes low palatability
Specific	Light	3	Good	Lenient	1-2	Anthracnose	Adaptable; per- sistent in poor soils	Low palatability; low productivity
None	Light	2	V. Good	Rotational	4-10	Anthracnose; stem borer	Persistent; drought resis- tant	Disease problems
None	Light	3	Good	Heavy	1-4	Anthracnose	Drought resis- tant; requires heavy grazing	Annual; early season productivity is low
Specific	None	4	Good	Lenient	2-6	Anthracnose	Tolerates poor soils	Sheds leaves in dry season
None	Strong (acid)	2	Fair	Usually cut	7-8	Few problems	Palatable; produc- tive	Competes poorly with weeds in early stages
None	Light	2	Poor	Lenient cutting or grazing	8-12	Few problems	Palatable; drought resistant; adaptable	Competes poorly with weeds
None	Light	5	V. Good	Heavy cutting or grazing	10-20	Few problems	Tolerant of drought and poor soils	Slow establishment; sometimes unpalata- ble
None	(usually propagated vegetatively)		V. Good	Heavy cutting	8-10	Few problems	Easily established; high feeding quality; rapid regrowth	Not suitable for V. acid soils; sheds leaves in long dry season.

# Some Legumes for Acid Soils

## GRAZING TYPES



*Stylosanthes guianensis*



*Macroptilium atropurpureum*

## BROWSE TYPES



*Desmodium gyroides*



*Desmanthus virgatus*

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