Lexys

Legume selection software

Introduction

- Conceived and developed by IITA with NARS and IARC collaborators in West and Central Africa

- interested in integrating legumes into farming systems

- Computerized database –scientific names

- 113 tropical herbaceous & shrub legume species, & a small number of woody legumes and tropical crops*grain legumes captured

- Legume CHOICE market

- *Criteria* for database search; ecological adaptability, cropping system niche, contributions, pest problems, trap crops.

- Download available LEXSYS,

- https://www.bangor.ac.uk/senrgy/staff/mcdonald.php.en

Criteria description

Ecological adaptability: Precipitation, altitude, temperature, pH range, drought tolerance, fertility requirement, soil type, water logging

System niche: morphology, growth type, life cycle, initial growth rate, productive growth rate

Contribution: Vegetable, grain yield, green fodder yield, hay yield, soil carbon, reduction of soil erosion, weed suppression, avoid toxicity

Pest problems (not susceptible to): diseases, insect pests, viruses, nematodes, parasitic weeds

Trap crops: parasitic, nematodes

Other features

- **Browse species:** simple
- *Limitation*: some species have no data in the data base

Decision Support for the Integration of Legumes into Tropical Farming Systems

EXIT   CRITERIA   REPORT   BROWSE   SEARCH   DATABASE   PRINT/SAVE   REFRESH   HELP

Ecology

Precipitation (mm)
- [ ] < 600
- [ ] 600 -> 900
- [ ] 901 -> 1200
- [ ] 1201 -> 1500
- [ ] > 1500

Altitude (m)
- [ ] < 800
- [ ] 800 -> 1600
- [ ] 1601 -> 2400
- [ ] > 2400

Temperature (C)
- [ ] < 13
- [ ] 13 -> 20
- [ ] > 20

Ph range
- [ ] Strongly acid
- [ ] Moderately acid
- [ ] Neutral
- [ ] Alkaline

Drought tolerance
- [ ] Tolerant
- [ ] Moderately Tolerant
- [ ] Susceptible

Fertility requirement
- [ ] Low
- [ ] Moderate
- [ ] High

Soil type
- [ ] Sandy
- [ ] Loamy
- [ ] Clay

Water logging tolerance
- [ ] Tolerant
- [ ] Moderately Tolerant
- [ ] Susceptible

System Niche

Morphology
- [ ] Tree
- [ ] Tree/shrub
- [ ] Shrub
- [ ] Shrub/herb
- [ ] Herb

Growth type
- [ ] Erect
- [ ] Semi-erect
- [ ] Spreading
- [ ] Spreading/trailing
- [ ] Spreading/climbing
- [ ] Climbing

Life cycle
- [ ] Annual
- [ ] Annual or semiperennial
- [ ] Biannual
- [ ] Biannual or semiperennial
- [ ] Semiperennial
- [ ] Perennial

Initial growth rate
- [ ] Very low
- [ ] Low
- [ ] Moderate
- [ ] High

Productive growth rate
- [ ] Very low
- [ ] Low
- [ ] Moderate
- [ ] High
- [ ] Very high

Contributions

Vegetable (human nutrition)
- [ ] High potential
- [ ] Moderate potential
- [ ] Low potential
- [ ] Not used

Grain yield
- [ ] Low
- [ ] Medium
- [ ] High

Green fodder yield
- [ ] High potential
- [ ] Moderate potential
- [ ] Low potential
- [ ] Not useful

Hay yield
- [ ] Low
- [ ] Medium
- [ ] High

Soil nitrogen contribution
- [ ] High potential
- [ ] Moderate potential
- [ ] Low potential
- [ ] None or minor
- [ ] Net N-extraction likely

Reduction of soil erosion
- [ ] High potential
- [ ] Moderate potential
- [ ] Low potential
- [ ] None or minor
- [ ] May promote soil erosion

Weed suppression potential
- [ ] High potential
- [ ] Moderate potential
- [ ] Low potential
- [ ] None or minor
- [ ] Could be aggressive weed

Avoid toxicity in
- [ ] Grain
- [ ] Green fodder

Pest problems

Species not susceptible to ....

Diseases
- [ ] Anthracnose
- [ ] Cercospora
- [ ] scab
- [ ] Fusarium ..
- [ ] Septoria
- [ ] bacterial blight

Insect pests
- [ ] Aphis craccivora
- [ ] bruchids
- [ ] beanfly
- [ ] pod borers
- [ ] pod suckers
- [ ] thrips

Viruses
- [ ] Groundnut rosette
- [ ] Cowpea mosaic
- [ ] Cowpea yellow mosaic

Nematodes
- [ ] Meloidogyne
- [ ] Pratylenchus
- [ ] Helicotylenchus

Parasitic weeds
- [ ] Striga asiatica/hermonthic·
- [ ] Striga gesnerioides
- [ ] Alectra vogelii
- [ ] Orobanche
- [ ] Cuscuta

Trap crops

Parasitic (TC)
- [ ] Striga spp. on cereals
- [ ] Orobanche
- [ ] Striga gesnerioides
- [ ] Alectra vogelii
- [ ] Cuscuta

Nematodes (TC)
- [ ] Meloidogyne root-knot
- [ ] Pratylenchus on cereals
- [ ] Helicotylenchus
- [ ] General nematode suppres·

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