

4. Mexican Sunflower

Benefits

- 21% Protein
- 75% Digestible nutrients
- Fixes nitrogen in the soil
- Pollination

Varieties

- *Tithonia diversifolia* for edges
- *Tithonia rotundifolia* for self seeding within pasture

[https://www.feedipedia.org/node/15645#:~:text=Mexican%20sunflower%20foliage%20is%20a,et%20al.%2C%202005\).](https://www.feedipedia.org/node/15645#:~:text=Mexican%20sunflower%20foliage%20is%20a,et%20al.%2C%202005).)



5. Pigeon Pea

Benefits

- 19% Protein
- Fixes nitrogen in the soil
- Dried beans edible for humans
- Pollination

Tips

- Cut back to 3' a few times a year for chop-and-drop



PIGEON PEA

6. Mulberry

Benefits

- 14-34% Protein
- 80% Digestible nutrients
- Flavonoids and bioflavonoids
- Edible fruit for humans and wildlife
- High Antioxidants and Vitamin C

Varieties

- Dwarf Everbearing
- Chaing Mai 60
- Dwarf Thai Red
- Dwarf Shah Reza



7. Passion Vine

Benefits

- Rinds of the fruit are edible for most livestock and have rumen benefits
- Vines and leaves are mostly ignored because of cyanic acid
- Very beneficial for pollination around pasture edges
- Should not be given “free choice”

Varieties

- Passiflora Incarnata
- Purple Possom



8. Sugar Cane

Benefits

- Roughage aids in rumen health
- Sucrose source
- 86% digestibility
- Satisfies the needs of fermentable nitrogen (ammonia, urea) and trace nutrients (peptides, amino acids, minerals, and vitamins)

Varieties

- Red
- Black
- NOTE: Avoid green / yellow, as it tends to spread rapidly

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5838343/>

<https://www.feednavigator.com/Article/2019/10/30/Highly-digestible-sugarcane-silage-may-improve-cattle-intake-rumen-passage>



Ground Covers

- A. Sweet Potato Vine
- B. Longevity Spinach
- C. Comfrey
- D. Chicory
- E. Clover
- F. Diakon Radish

Sunn Hemp as Cover Crop





PERMACULTURE LIVESTOCK

forage & fodder workshop