

**How to evaluate forages  
with farmers...**

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## How to evaluate forages with farmers...



### **When offering forages to farmers, it is important to:**

1. Understand farmers' needs.
2. Choose suitable ways of growing and using forages.
3. Choose forages that are best adapted to climate and soil.
4. Offer farmers the best varieties, not just any variety of a species.
5. Offer a basket of choices.

## 1. Understand farmers' needs.

Not all farmers need forages. Sometimes there is enough naturally occurring feed to meet the needs of their animals. Only those farmers who perceive a real need will be motivated to evaluate forages and adapt them to their specific situation. Another booklet in this series, 'Developing agricultural solutions with smallholder farmers - participatory approaches for getting it right the first time', describes ways of working with farmers to identify needs and to find solutions.

When we know the farmer's particular problems, we can choose suitable ways of growing and using forages that will provide the best solutions.



*Working with farmers to evaluate forages in northern Laos (JH)*



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## 2. Choose suitable ways of growing and using forages.

Useful ways of growing and using forages to solve particular problems are described below. It is important to work with farmers to understand which of these options may meet their needs and best fit into their farming systems.

### **Cut & carry plots**

- provide easy access to cut feed
- concentrate manure near the house for easy collection

### **Grazed plots**

- a simple way of feeding animals if land is available
- need to be fenced to keep other grazing animals out

### **Living fences**

- keep animals out of crops or forage plots
- provide a high protein feed supplement

### **Hedgerows**

- grown along the contour in sloping lands reduce run-off and erosion
- can also be grown along fence lines or between fields

- 1 Cut and carry plots (WS)
- 2 Grazed plots (WS)
- 3 Living fences (WS)
- 4 Hedgerows (WS)

**Improved fallows**

- legumes grown in crop land which is left fallow for one or more years
- restore soil fertility and suppress weeds

**Cover crops in annual crops**

- legumes grown with annual crops such as maize or cassava
- suppress weeds, improve soil fertility and reduce erosion

**Cover crops under trees**

- legumes grown under trees such as fruit trees, bananas and coconuts
- suppress weeds, improve soil fertility and reduce erosion



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- 1 Improved fallow (WS)
- 2 Cover crops in annual crops (PH)
- 3 Cover crops under trees (WS)



### **Ground covers for erosion control**

- competitive, often stoloniferous grasses and legumes
- provide ground cover, reduce erosion and suppress weeds

### **Legume supplementation for the dry season**

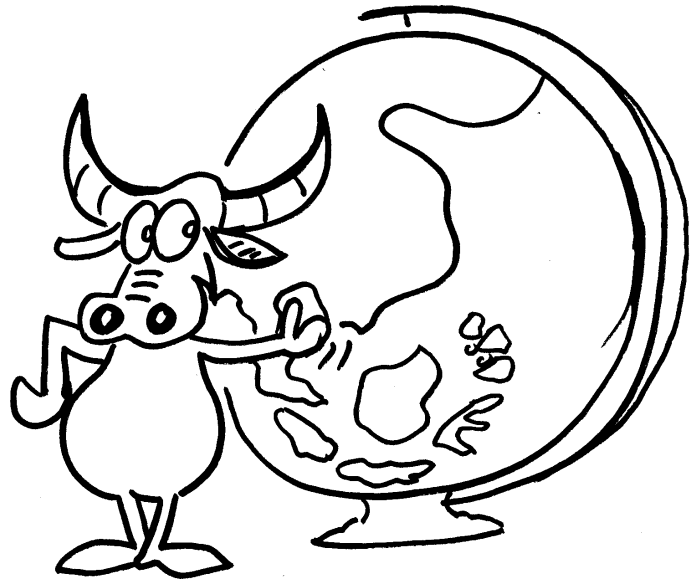
- high-protein legumes allow animals to utilise low-quality feed more efficiently

### **Legume leaf meal**

- dried legume leaf can be stored and fed to animals, especially chickens and pigs, as a high-protein supplement

The forage varieties best suited for each of these forage systems are listed in Table 1 of Section 3.

- ❶ *Ground covers for erosion control (WS)*
- ❷ *Legume supplementation for the dry season (WS)*
- ❸ *Legume leaf meal (WS)*



### 3. Choose forages that are best adapted to the climate and soil

No forages will grow well everywhere. Some grow well on acid soils; others do not. Some grow well in cool areas; others do not. Forages can survive in areas where they are not adapted but they will not grow well. It is important to choose forages that are adapted to local soils and climate.

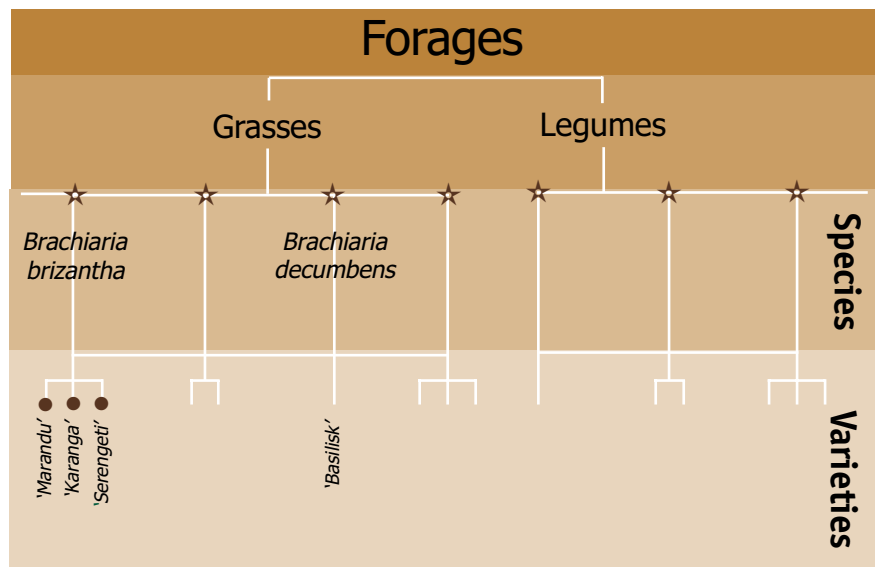
Important climate and soil factors affecting forage adaptation are the length of dry season, temperatures, soil fertility, soil pH and drainage. The adaptation of species to climate and soils is shown in Section 3 (Table 2 and 'Special considerations') and Section 4 'More about each species'.



#### 4. Offer the best varieties to farmers, not just any variety of a species!

There are many forage species and each of these can have one or more varieties. A good example is the species *Brachiaria brizantha* (see Figure 1) which has three varieties. One of the varieties, 'Serengeti' is quite short and forms a sward (similar to the variety 'Basilisk' of *B. decumbens*) while the other two varieties of *B. brizantha* are tall. They also flower and produce seed at different times of the year.

Figure 1: What are species and varieties?





## How do we identify different varieties?

Research organizations in different countries give each variety their own identification number. For example, *Arachis pinto* 'Amarillo' was given the number CIAT 17434 by CIAT, CPI 58113 by CSIRO and BRA 013251 by EMBRAPA in Brazil. Only when a country releases a variety commercially, it is given a 'cultivar' name. If a variety is released in many countries it can have many cultivar names. For example, *Arachis pinto* 'Amarillo' was given the name cv. Amarillo in Australia, cv. Mani Forrajero Perenne in Colombia and cv. Pico Bonito in Honduras.

Some of the varieties recommended for Southeast Asia did not have names but only identification numbers which are difficult to remember. Through consultation with national forage research and development organizations in Southeast Asia, each recommended variety has been given a name. These names are based on existing cultivar names (eg. 'Amarillo'), common names (eg. 'Gamba'), the name of the location where the variety was collected (eg. 'Serengeti') or the name of the area where the variety is widely used (eg. 'Besakih'). A Table relating these variety names to identification numbers and showing the country of origin of the variety is included in Section 5 'Appendices'.

Varieties are selected for special characteristics, such as growth habit, time of flowering, high seed yield, disease resistance and tolerance to water logging. New varieties are being released all the time to overcome particular problems. For example, the species *Brachiaria decumbens* currently only has one variety ('Basilisk'). This variety grows well in Southeast Asia but seed production is poor in many areas. New varieties of *Brachiaria decumbens* are being selected to overcome this problem. It is important to offer farmers the best varieties, not just any variety of a species!

This booklet recommends the best varieties for different climates, soils and uses!



## 5. Offer a basket of choices

When farmers begin to evaluate forages, make sure you

- offer a range of species and varieties, not only one or two 'favoured' varieties.
- do not offer too many choices at any one time. It is difficult for farmers to evaluate a large number of new varieties. In most cases 4 to 8 varieties is ideal.
- plant small areas of each variety before expanding to larger areas. It is better to work with many farmers who plant small areas rather than a few farmers who plant large areas.



*Offer a basket of choices (PH)*