Desho grass (Pennisetum pedicellatum) for livestock feed, grazing land and soil and water management on small-scale farms

Objectives:
- To introduce highly palatable, nutritious and fast growing grass characterized by high leaf/stem ratio
- To improve grazing land management, combat declining productivity and carrying capacity of the grazing land, and
- To stabilize the physical soil and water conservation structure.

Uses:
- A year round livestock fodder (SLM Ethiopia)
- For erosion control through strip planting (SLM Ethiopia; Welle et al. 2006)
- To rehabilitate degraded land (SLM Ethiopia; Smith 2010)
- To improve grazing land management (Danano 2007)
- As silage for dry season feed

Management practices: Land preparation:
- Desho needs very good land preparation

Preparation of planting materials:
- Splits of grass from root clump can be used as planting material
- Grass clumps should be uprooted and split into several splits
- Stem cutting of matured plant that has ≥ 3 nodes

Planting:
- Recommended to plant at 10 cm by 10 cm intervals along bunds for SWC
- Recommended to plant at 50 cm by 50 cm intervals for grazing land management (ILRI forage unit experience)
- Remove the leafy part before planting to reduce competition before it establishes well
- Open the soil with hoes and place the split in the soil before pressing the basal soil around the seedling

Fertilization:
- Compost/manure of about 4500 kg/ha for establishment and 1000 kg for maintenance (Danano 2007)
- Use about 100 kg/ha of fertilizer for establishment and 25 kg for maintenance (Danano 2007)
- After 2–3 years maintenance fertilizer application can be reduced (Danano 2007)

Description:
- Desho is an indigenous grass of Ethiopia belonging to the family of Poaceae (Welle et al. 2006; Smith 2010)
- It is a perennial grass which has an extensive root system that anchors well with the soil (SLM Ethiopia)
- It has a high biomass production capacity 30–109 t/ha (Ecocrop 2010)
- It grows upright with the potential of reaching 90–120 cm based on soil fertility (SLM Ethiopia; Shiferaw et al. 2011)
- It can grow anywhere from 1500–2800 masl with optimum elevation over 1700 masl on medium to low soil fertility (SLM Ethiopia)
Weeding:
- Needs continuous weeding and gap filling (SLM Ethiopia)

Harvesting:
- Cut and carry system is encouraged (Smith 2010)
- Should be harvested at 8 cm high from ground level
- Highest yield can be obtained if first harvested at 4 months after planting (Gohl 1981)

Economics of production:
- Desho provides a small business opportunity for Ethiopian farmers (sale of the cut and planting materials) (IPMS 2010; Shiferaw et al. 2011)
- The use of Desho for feed and land management is increasing rapidly

Limitations for wider adoption:
- Shortage of inputs (planting material)
- The establishment and maintenance of Desho requires intensive labour (Danano 2007)
- Free grazing practice is another shortcoming for its sustainability

References

Ecocrop. 2010. Ecocrop database. FAO.


IPMS Ethiopia. 2010. Improved Productivity and Market Success of Ethiopian farmers.


SLM Ethiopia. SLM knowledge: Technologies (Desho grass soil bund).
