Desho Grass: A feed for mid to high altitudes

Desho grass planted at Zenzelma, Northwestern Ethiopia

Dairy cattle feeding on fresh desho fodder

Preparation of planting material (strips)

Description

- ✓ Desho (*Pennisetum pedicellatum*) is an indigenous adaptable multipurpose grass of Ethiopia belonging to the family of Poaceae (angiosperms)
- ✓ It is a perennial grass which has an extensive root system that anchors well in the soil
- ✓ It has vigorous vegetative growth and a high biomass production capacity 30-109 of green herbage/ha/year, 30-40 t/ha without fertilizer application. It responds well to fertilization
- ✓ It grows upright to 90-120 cm based on soil fertility. It grows in mid and high altitudes (1500-2800 masl) with a wide adaptation to wide ranges of well-drained soils and topographies, with optimum elevation over 1700 masl on medium to low soil fertility.
- ✓ Has highest nutritive value between 90-120 days after planting
- ✓ Convenient for smallholder farmers as a backyard enterprise for cut and carry feeding systems

Key benefits

- ✓ Provides year round fodder for growing, fattening and lactating animals. Average chemical composition and digestibility, % DM of sun dried aerial parts of an ecotype from NW Ethiopia is as follows: *Dry matter: 93.5 as fed, Crude protein: 5.4, Neutral detergent fibre: 67.3, Acid detergent fibre: 38.1, Acid detergent lignin: 3.6, Total ash 11.20, In vitro organic matter digestibility: 58.2*
- ✓ Can be preserved as hay and silage for use as dry season feed
- ✓ Erosion control through strip planting. It provides good soil cover. Plant spacing of 10 cm x 50 cm yields better dry matter and is recommended for land optimization
- ✓ Used to improve grazing land management
- ✓ Used to rehabilitate degraded land, controls water loss effectively, recovers rapidly after watering even under severe drought
- ✓ Source of income through sale of cut forage and planting material

Key limitations

- ✗ Shortage of planting material
- ✗ The establishment and maintenance requires intensive labor and management
- ✗ Free grazing practice is another shortcoming for its Sustainability
- ✗ Require supplementation of nitrogen and energy to maintain growth and milk production in adult ruminants

Where does this intervention fit?

Desho improves soil cover, moisture retention and fertility

Just before the dry season, desho is harvested and preserved as hay

Potential to overcome feed limitations		Score
• Feed scarcity during ***dry season*** :		high
• Feed scarcity during ***cropping season*** :		high
• Low feed availability :		high
• Poor feed quality :		medium
Applicability to livestock		Score
Cattle/buffalo	• Breeding (cow-calf) :	low
	• Fattening :	medium
	• Dairy :	medium
Sheep/goats	• Breeding :	low
	• Fattening :	medium
Pigs	• Breeding (sow-piglets) :	not applicable
	• Fattening :	not applicable
Applicability to farming system		Score
• Pastoral (extensive grazing systems) :		low
• Agro-pastoral/extensive mixed systems :		low
• Intensive mixed crop-livestock system :		Very high
• Landless livestock producers :		medium
Requirement for resources		Score
Requirement of	• Land :	medium
	• Water :	medium
	• Labour :	high
	• Cash/credit :	medium
	• Access to inputs :	medium
	• Knowledge/skills :	medium

For more information:

- ✓ Asmare, B., Demeke, S., Tolemariam, T., Tegegne, F., Wamatu, J. 2016. Determinants of the utilization of desho grass (*Pennisetum pedicellatum*) by farmers in Ethiopia. Tropical Grasslands-Forrajes Tropicales (2016) Vol. 4(2):112–121.
- ✓ Asmare, B., Demeke, S., Tolemariam, T., Tegegne, F., Wamatu, J., Rischkowsky, B. 2016. Evaluation of desho grass (*Pennisetum pedicellatum*) hay as a basal diet for growing local sheep in Ethiopia. Trop Anim Health Prod., 48:801–806.
- ✓ Asmare, B., Demeke, S., Tolemariam, T., Tegegne, F., Haile, A., Wamatu, J. 2017. Effects of altitude and harvesting dates on morphological characteristics, yield and nutritive value of desho grass in Ethiopia. Agriculture and Natural Resources, May-June, Vol. 51 (3).