

Azolla- As Livestock Feed

About Azolla

- Azolla is a floating fern which resembles algae
- Normally azolla is grown in paddy fields or shallow water bodies
- Multiplies very rapidly



Azolla – close view

Azolla as fodder/ feed

- Rich in proteins, essential amino acids, vitamins (vitamin A, vitamin B12 and Beta- Carotene), growth promoter intermediaries and minerals like calcium, phosphorous, potassium, ferrous, copper, magnesium
- Dry weight basis, it contains 25 - 35 percent protein, 10 - 15 percent minerals and 7 - 10 percent of amino acids, bio-active substances and bio-polymers
- Livestock easily digest it, owing to its high protein and low lignin content
- Azolla can be mixed with concentrates or can be given directly to livestock

- Can also be fed to poultry, sheep, goats, pigs and rabbits.

Azolla Production

- The soil in the area is first cleared of weeds and leveled
- Bricks are lined horizontally in a rectangular fashion.
- A UV stabilized silpauline sheet of 2mX2m size is uniformly spread over the bricks in such a way as to cover the margin of the rectangle made by the bricks
- 10-15 kg of sieved soil is uniformly spread over the silpauline pit
- Slurry made of 2 kg cow dung and 30 g of Super Phosphate mixed in 10 liters of water, is poured onto the sheet. More water is poured on to raise the water level to about 10 cm

- About 0.5-1kg of pure mother azolla culture seed material is spread uniformly over the water, after mild stirring of soil and water in the azolla bed. Fresh water should be sprinkled over the azolla immediately after inoculation to make the azolla plants upright
- In a week's time, the azolla spreads all over the bed and develops a thick mat like appearance.
- A mixture of 20 g of Super Phosphate and about 1 kg of cow dung should be added once in 5 days in order to maintain rapid multiplication of the azolla and to maintain the daily yield of 500 g
- A micronutrient mix containing magnesium, iron, copper, sulphur etc., can also be added at weekly intervals to enhance the mineral content of azolla
- About 5 kg of bed soil should be replaced with fresh soil, once in 30 days, to avoid nitrogen build up and prevent micro-nutrient deficiency
- 25 to 30 percent of the water also needs to be replaced with fresh water, once every 10 days, to prevent nitrogen build up in the bed
- The bed should be cleaned, the water and soil replaced and new azolla inoculated once every six months
- A fresh bed has to be prepared and inoculated with pure culture of azolla, when contaminated by pest and diseases



Well grown Azolla



Azolla Production Pits

Harvesting

- Will grow rapidly and fill the pit within 10 - 15 days. From then on, 500 - 600 g of azolla can be harvested daily.
- Can be done every day from the 15th day onwards with the help of a

plastic sieve or tray with holes at the bottom

- The harvested azolla should be washed in fresh water to get rid of the cow dung smell

Alternative Inputs

- Fresh biogas slurry may also be used
- Waste water from bathroom and cattle shed can also be used to fill the pit. In areas where there is a problem of fresh water availability, the water left after washing clothes (after the second rinsing) can also be used.

Environmental factors for the growth

- Temperature 20°C - 28°C
- Light 50% full sunlight
- Relative Humidity 65 - 80%
- Water (standing in the tank) 5 - 12 cm
- pH 4-7.5

Points to be noted during cultivation of azolla

- Washing in a net will be useful as it will allow small plantlets to get out, and they can be poured back in to the pond
 - Care should be taken to retain the temperature below 25°C.
 - Shade nets can be used to cut the light intensity.
 - The azolla biomass should be removed daily to avoid over crowding.
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