



A Case Study

## Azolla cultivation: A supplementary cattle feed production through natural resource management

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Evolution of high yielding variety especially in paddy has increased the grain yield, but the straw: grain ratio have been decreased. Short straw with nutritionally low straw is growing threat for the grazing lands a result of urbanization. In quality has invited an insecured cattle feed availability for the rural people. With this situation Azolla, the aquatic fern, host of blue green algae, can be a leading solution to solve the scarcity problem of cattle feed. Azolla is a floating fern which resembles algae. Normally Azolla is grown in paddy field or in shallow water bodies, multiplies very rapidly. It belongs to the family Azollaceae. The fern Azolla, a host of symbiotic blue green algae *Anabaena azolle* which is responsible for the fixation and assimilation of atmospheric nitrogen. Use of Azolla is now multifaced. Azolla can be cultivated not only as bio-fertilizer but also as cattle feed. In addition to it's traditional cultivation as a bio-fertilizer for wet land paddy, Azolla is finding increasing use for sustainable production of lives stock feed (Pillai, 2008). Azolla technology if once introduced, get integrated with farmyard and homestead activities through sustained results.

### Azolla as cattle feed :

Azolla is very rich in proteins, essential amino acids, vitamins, potassium, ferrous, copper, magnesium, zinc etc. On a dry weight basis, Azolla consists of 25-35 per cent protein,

10-15 per cent mineral and 7-10 per cent amino acids, bio-active substances and bio-polymers. Carbohydrate and oil content in Azolla is very low (Source: NDDDB study at Anand). All these bio-chemical constitutions along with rapid multiplication rate make Azolla ideal organic feed substitutes for livestock. Livestock can easily digest Azolla due to high protein content and low lignin content. Trials on dairy animals showed an overall increase of milk yield by 15-20 per cent when 2-3 kg of Azolla was combined with regular feed and 15-20 per cent of commercial feed can be replaced with the same quantity of Azolla on dry weight basis, without affecting milk production (Source: VK-NARDEP, Tamil Nadu). Azolla feeding also improved the health and milk quality.

### Low cost technique of Azolla cultivation :

- 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 2m x 2m 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 litres of water,

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