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Knowledge Hub for Organic Agriculture in Eastern Africa

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AZOLLA CULTIVATION FOR ANIMAL FEEDS

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INTRODUCTION

Azolla also known as duckweed, mosquito fern or water fern is an aquatic plants that grow rapidly double their volumes in just two days belonging to Salvinaceae family.

It grows in fresh water and is naturally available mostly on moist soils, ditches, marshy ponds and is widely distributed in the tropical belts of India

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Classification /Taxonomy

Kingdom: Plantae

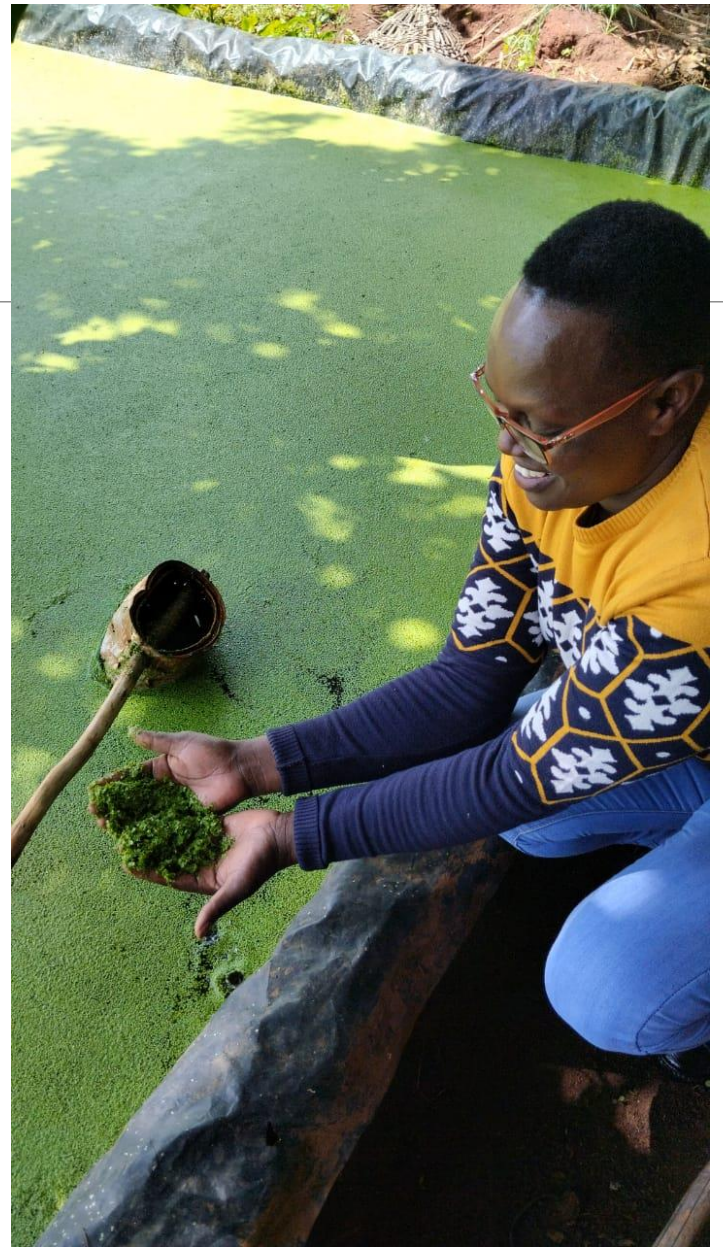
Division: Pteridophyta

Class: Polypodiopsida

Order: Palvinales

Family: Salvinaceae

Genus: Azolla



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Economic Value

- On dry weight basis *Azolla* contains the following chemical compositions:

Nitrogen	:	5.0 %
Phosphorous	:	0.5 %
Potassium	:	2.0-4.5%
Calcium	:	0.1-1.0%
Magnesium	:	0.65 %
Manganese	:	0.16 %
Iron	:	0.26 %
Crude Fat	:	3.0-3.3 %
Sugar	:	3.4-3.5 %
Starch	:	6.5 %
Chlorophyll	:	0.34-0.55 %
Ash	:	10.0 %

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Requirement for Azolla Growth

Water: fresh water 10-15 cm in the multiplication pond, adequate water level in the pond is 4 inches

Temperature: Day/night ranges between 32-30 degrees are most favourable.For a luxurious growth of azolla temperatures of 23-30 degree centigrade

Light: Azolla grows well under partial shade

Relative humidity:85-90 %

Soil PH: azolla grows well in slightly acidic soil: 5.2-5.8

Nutrition :being a nitrogen fixing fern, azolla doesnt require nitrogenious fertilizer for its growth.(phophorus 20kgs/hac. is desirable for good biomas production.

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Steps in Azolla cultivation

Pond selection

- Near home for regular upkeep and monitoring
- Nearby a regular water supply
- Under partial shade to minimize evaporation and encourage growth
- The floor area of the pond should be free from any sharp areas and object to avoid breaking of liners that might cause leaking

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Pond size and construction

Pond size depend on the number of species cultured, supplement requirement and availability of resources

For small holder farmers, 4 by 6 feet pond is enough to produce 1 kg of supplement every day

The selected area should be cleared and levelled. the walls of the pond can either be made of bricks or raised embarkment made of excavated soil. The pond can also be lined.

Secure all the sides properly using bricks

Once inoculation is done, cover the pond with a net to prevent debris falling to the pond

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Production of Azolla

- Sieved fertile soil mixed with cow dung and water is spread uniformly in the pond
- Biogas slurry can also be used instead of cow dung
- The depth of water should be 4-6 inches
- 1kg of azolla culture is needed for a 4 by 6 feet pond.

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Pond Maintenance

- Add nutrient to the pond once every two to three weeks
- Any litter or aquatic plants should be removed regularly
- The pond need to be emptied once in every 6 months and cultivation started with soil and new azolla culture

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Harvesting and feeding Azolla

After 10-14 days , the Azolla will cover the whole pond and harvest it on 15 th day.(this will depend on the quality of culture used, climatic condition and nutrient level)

Harvest Azolla by scooping it off from the pond by hand or using a plastic sieve.

azolla can be fed to livestock in fresh,or dry form.It can be fed directly or with other concentrates.

Azolla has to be cleaned thoroguhly in clean water to remove cowdung smell

Shade your pond to prevent direct sunlight , it turns brownish reddish and lowers nutrient levels

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Limitation of Azolla

1. Water is prerequisite for Azolla production
2. Extremely low temperature is not suitable
3. Initial cost is slightly highly
4. Ignorance on the importance of Azolla

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Q/A SESSION

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