DUCKWEED CULTURE

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What is Duckweed?

- Duckweed is the common name for small family of aquatic herbs called “Lemnaceae” that grows in fresh water
- The smallest flowering plant on earth
What is Duckweed?

- Typically found floating in thick mats of homogeneous populations in quiet streams or ponds containing high levels of organic matter.
What is Duckweed?

– They can double their mass in less than two days under ideal conditions of nutrient availability, sunlight and temperature.
What is Duckweed?

- Extremely efficient absorbers of ammonia, nitrate, phosphorous, potassium, magnesium, calcium, sodium, chlorine, boron and iron.
What is Duckweed?

– Duckweed can remove as much as 99% of the nutrients and dissolved solids in wastewater
What is Duckweed?

– Duckweed can have protein levels as high as 35% to 45%
The Growing Pond
Size of Pond
Size of Pond

– Can be any size. 1 sq. meter area yields a maximum of 1 kilo harvest (daily!)
Water Depth
Water Depth

– Minimum of 1 foot
PH Level

- 6.5 to 7.5 ph
- will survive at 5 to 9 but growth rate is slow
Water Temperature
Water Temperature

– 6 to 30 degrees Celsius
Avoiding Stress
Shade Roof

- Provide shade roof to avoid stress due to excessive sunlight (eg. Coconut leaves)
Duckweed Feed
Duckweed Feed

- Duckweeds feed on organic materials rich in nitrogen so animal dung like chicken, rabbit dung serves as fertilizers of duckweeds
Harvesting Duck weed
Harvesting Duckweed

Step 1

• Place the 5-gallon bucket or crate and the basket along the bank of the pond near the end where you will be harvesting the duckweed. Both should be easily accessible while wading in the pond.
Harvesting Duckweed

Step 2

• Wade into the pond carrying the bamboo pole; starting in the center of the pond
Harvesting Duckweed

Step 3

• Position the bamboo pole on top of the water and slowly guide it across the top of the water corralling the duckweed as you walk toward one end of the pond
Harvesting Duckweed

Step 4

• Continue to guide the duckweed until you have it worked into one corner of the pond
Harvesting Duckweed

Step 5

Anchor the ends of the bamboo pole on each side of the bank, allowing the main body of the pole to remain in the water to contain the duckweed.
Harvesting Duckweed

Step 6
Retrieve the basket to harvest the duckweed
Harvesting Duckweed

Step 7

Using the basket, scoop the duckweed from the water and pour into the 5-gallon bucket
Harvesting Duckweed

Step 8

Continue the harvest of duckweed from the water until you reach the quota of your duckweed.
Duckweed as Feed stock
Feed stock for Fish

- The high protein content of duckweed makes it the best alternative fish feed for Tilapia, carp, pangasius (cream dory) and catfish.
Feed stock for Livestock

- The pigs love to snack on duckweeds
Feed stock for Poultry

• Duckweeds for poultry is best.
• A great substitute of soy meal
As Fertilizer for Crops

Fermented duckweed yields a very high nitrogen needed for plant growth. After 1 week fermentation, the liquid part is extracted and diluted with water for foliar spray while the solid part is use for livestock feed.
QUESTIONS?