Along with this, approximately 1 kg of KOH is "Aquatic plant Azolla as the For every 50 L of Azolla oil, we used, which is roughly 2% of Harvested Azolla, universal the oil's mass, to catalyze the mix it with 100 L of ethanol expected (max) 1000 feedstock for biofuel transesterification reaction resulting in a 2:1 ethanol-toproduction" kg / day / feddan oil ratio by volume. EN14214 standard [28]. Biodiesel produced ≈ $7.65 \text{ kg} \approx 8.7 \text{ L of}$ **Potasium** Hydroxide high quality diesel (FAEE) TransEstiration **Azolla Biomass Cold Press** Azolla oil Diesel 0.94 L glycerine Feed stock supplement Fermentation material Dry **Ethanol Glycrine Fermentation Biomass Dry Waste** 1. Vermicompost input 2. feedstock to cattle 3.After being charged properly, applied to soil 4.carbon credits Bio Char 1. Feedstock to cattle **Pyrolysis** 2. Feedstock can be added to Vermicompost diesel to cover gaps **Bio Oil** but at cost of quailiy

Initial Fresh Azolla: 1,000 kg (≈90%

water)

Total Dry Biomass: ~100 kg

Dry Biomass for Oil Extraction (85%):

85 kg (from ~850 kg fresh)

Oil Extracted: ~8.5 kg (~9.44 L)

Dry Biomass for Fermentation (15%):

15 kg (from ~150 kg fresh)

Ethanol Produced: ~18.75 L

Transesterification Requirements:

~2:1 ethanol-to-oil by volume

Biodiesel Produced (≈90%

conversion): ~7.65 kg (~8.7 L) diesel

Glycerine Produced: ~0.94 L