INTRODUCTION:
In India, Karnataka - prominent sector for coffee and areca-nut production – the coffee pulp and areca-nut husk are used as fuel for household burning or as an agricultural compost. The present research emphasizes on the utilization of coffee pulp and areca-nut husk as a potential source for bioethanol production. Less studied in comparison - bagasse, husk, pulp etc. Employs modified approaches in microbial pre-treatment procedures for the lingo-cellulosic feed stock by the application of microbial consortium comprising fungi and actinomycetes. The study earmarks a novelty in pre-treatment procedures for bioethanol production using low quality feed stocks conversion into biofuels.

OBJECTIVE:
• Isolation, screening, and characterization of potent cellulolytic microorganisms from soil.
• Chemical and microbial pre-treatment of coffee pulp and areca-nut husk.
• Qualitative and Quantitative Analysis of degraded biomolecules.
• Fermentation for ethanol production.

METHODOLOGY:
Pre-treatment:
• Chemical pre-treatment with acid (2% H2SO4) and alkali (0.25N NaOH) (Kumar et al., 2009).
Microbial Treatment:

- Soil serial dilution and plating – SCN, MRBA & PDB.
- Screening of cellulose degrading microorganisms – CMC agar media (Aneja, 1996).
- Microbial pre-treatment using potent organisms (Shenoy et al., 2011).
- Fermentation of pre-treated sample by Yeast (S. cerevisiae) (Shenoy et al., 2011).

Estimations:

- Reducing sugar estimation by DNS method (Kumar et al., 2012).
- Total sugar estimation by Anthrone method (Kumar et al., 2012).
- Protein estimation by FC method of the chemically pre-treated sample (Kumar et al., 2012).

Alcohol production and estimation:

- Fermentation of pre- treated sample using S.cerevisiae (State et al., 2014)
- Fermented sample subjected to distillation for isolation and purification of ethanol.
- The purity of sample to be estimated by subjecting to specific gravity method (Shenoy et al., 2011).

RESULTS:

- Coffee Pulp and Areca nut Husk samples were collected.
- Isolation of cellulose degrading microorganisms.
- Biochemical estimation of samples

Protein Estimation.

- The concentration of total protein in coffee sample was found to be 260µg/ml.
- The concentration of the total protein in areca- nut sample was found to be 250µg/ml.
- The protein content of both the samples was found to be almost the same.

Total Sugar.

- The concentration of the reducing sugar in coffee sample was found to be: 720µg/ml.
- The concentration of the reducing sugar in areca-nut sample was found to be 400µg/ml.
- The reducing sugar content was found to be higher in case of coffee pulp sample as compared to the areca- nut sample.
Reducing Sugar.

- The concentration of the total sugar in areca-nut sample was found to be 780µg/ml.
- The concentration of the total sugar in coffee sample was found to be 830µg/ml.
- The total sugar content was found to be little higher in coffee sample as compared to the areca-nut sample.

Estimation of alcohol:

- Specific gravity of sample (coffee) 1: 25.5g/26g = 0.9807
- Specific gravity of sample (areca-nut) 1: 25.5g/26g = 0.9807
- According alcohol metric density table the yield of alcohol was approximately 10-11%

Isolation of cellulolytic organisms:

Isolates were grown on CMC Agar plates.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of organism</th>
<th>Media used</th>
<th>Zone of clearance (in mm)</th>
</tr>
</thead>
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<tr>
<td>1</td>
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<td>CMC</td>
<td>2.5</td>
</tr>
<tr>
<td>2</td>
<td>Aspergillus ochraceus</td>
<td>CMC</td>
<td>6</td>
</tr>
</tbody>
</table>

Inference: *Aspergillus ochraceus* was selected as the suitable organism for microbial pre-treatment of coffee pulp and areca nut husk.