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# Wealth from waste-utilisation of fish waste for production of biogas

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## Introduction

A biogas unit was installed in the premises of Mangalore Research Centre of CMFRI during November, 2016 in order to utilize the fish waste generated from the biological analysis done in the lab. This biogas unit installed is first of its kind in the state to utilize fish waste. A unit was installed gainfully utilizing the fish waste generated after the biological analysis of fish. Disposal of the fish waste generated periodically at the Research Centre during sampling made for biological studies was becoming difficult. However, with the installation of the biogas unit- designed and supplied by private manufacturer in Kerala, solved the disposal problem of fish waste.

## Description of Solid waste and how is it done

At the centre after the biological analyses about 6-7 kg is produced. The fish waste of about 5 kg along with same quantity of vegetable waste produced in the Departmental Tiffin room is fed to the biogas unit. The portable biogas unit has 2 t capacity and when fully functional around 2 kg of gas is produced every day. The quantity of gas produced is utilized in the Department Tiffin Room. In addition the slurry collected from the unit is utilized for the production of manure by mixing it with the coconut fronds, grass leaves etc., is used as manure in the vegetable patch as well as in the terrace garden of the office. A vegetable garden is maintained in the office and the slurry is utilized for the terrace garden and vegetable patch maintained in the office. Total cost of the unit was about Rs.35,000/-.

## The Impact - How the situation is before and now

The biogas unit has helped in decreasing the LPG consumption to about 25-30 %. The vegetables that were grown included ridge gourd, bottle gourd, bitter gourd,

cucumber, brinjal, pumpkin tomatoes, ladyfinger, chillies, coriander leaves, amaranthus etc. About 100-120 kg of vegetables were produced every year. The vegetables were utilized for preparing food in the tiffin room and the vegetable waste was used for the biogas unit.

## Adoption by others

The program was taken up as part of the regular Swatch Bharath activity at the centre. The biogas unit for utilization of fish waste has attracted many people during the foundation day of ICAR-CMFRI, open house. The activity was covered by the Doordarshan Kannada TV, and most of the newspapers in Karnataka. There were queries regarding the biogas unit and fish processing and fish meal plants have come forward for installing the unit. The Scientists of the centre were called for radio talks to create awareness of the waste management.

The disposal of fish waste is a problem and hence installation of similar units in the fish meal and fish processing plants would address the issue of fish waste management to some extent.

## Economic aspects

The program was funded by ICAR-CMFRI as a part Swatch Bharath program. Total expense incurred was about Rs 35,000/- for installation of the unit. The LPG gas consumption reduced to 25-30% and approximately 100-120 kg of vegetables per year is produced in the premises.

## Conclusion

The utilization of fish waste has helped in minimizing the waste disposed from the centre. The biogas is renewal energy resource which helps in reducing the usage of fossil fuel. This method is efficient alternative technology that combines biofuel production with sustainable waste management.



Vegetable garden to utilize the slurry from biogas