

Maintenance and repair of the Biogas plant

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

**Spoken Tutorial and Rural ICT Project
IIT Bombay**

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Maintenance and repair of the Biogas plant

We will learn different techniques to maintain and repair-



Maintenance and repair of the Biogas plant

We will learn different techniques to maintain and repair-

- **the Biogas plant**



Maintenance and repair of the Biogas plant

We will learn different techniques to maintain and repair-

- **the Biogas plant**
- **the Biogas burner**



Maintenance and repair of the Biogas plant

Periodic partial and complete cleaning of the plant is a must-



Maintenance and repair of the Biogas plant

Periodic partial and complete cleaning of the plant is a must-

- **Biogas plant runs smoothly**



Maintenance and repair of the Biogas plant

Periodic partial and complete cleaning of the plant is a must-

- **Biogas plant runs smoothly**
- **Ensure efficient working of the Biogas plant for many years**



Maintenance and repair of the Biogas plant



Maintenance and repair of the Biogas plant

- **Maintenance section**



Maintenance and repair of the Biogas plant



Maintenance and repair of the Biogas plant

- **How often should one carry out maintenance of the Biogas plant?**



Maintenance and repair of the Biogas plant



Maintenance and repair of the Biogas plant

Maintenance should be daily by doing the following-



Maintenance and repair of the Biogas plant

Maintenance should be daily by doing the following-

- **Always, mix the bio-waste with water in the proper ratio**



Maintenance and repair of the Biogas plant

Maintenance should be daily by doing the following-

- Always, mix the bio-waste with water in the proper ratio
- Ensure smooth flow of bio-waste from mixing tank to digester tank



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- **Plant waste should be crushed and chopped up to 1-4 cms**



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- Plant waste should be crushed and chopped up to 1-4 cms
- Do not feed too much straw into the digester tank



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- Plant waste should be crushed and chopped up to 1-4 cms
- Do not feed too much straw into the digester tank
- **Sticks and branches of trees should be avoided**



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Maintenance and repair of the Biogas plant

- **Soap, oil, chemical, insecticide and pesticides should not be added**



Maintenance and repair of the Biogas plant

- Soap, oil, chemical, insecticide and pesticides should not be added
- Soil, sand or stone should also not be added



Maintenance and repair of the Biogas plant

- Soap, oil, chemical, insecticide and pesticides should not be added
- Soil, sand or stone should also not be added
- They will accumulate at the base of the digester and hinder gas production



Maintenance and repair of the Biogas plant



Maintenance and repair of the Biogas plant

- **Quantity of bio-waste to be supplied depends upon the size of the plant**



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- Quantity of bio-waste to be supplied depends upon the size of the plant
- Too much bio-waste should not be fed into the digester



Maintenance and repair of the Biogas plant

- Quantity of bio-waste to be supplied depends upon the size of the plant
- Too much bio-waste should not be fed into the digester
- **This will lead to shorter retention time**



Maintenance and repair of the Biogas plant

- Quantity of bio-waste to be supplied depends upon the size of the plant
- Too much bio-waste should not be fed into the digester
- This will lead to shorter retention time
- **Fermentation won't be completed**



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- If less bio-waste is fed into the digester, gas production will be low



Maintenance and repair of the Biogas plant

- If less bio-waste is fed into the digester, gas production will be low
- **Water condensation should be checked-**

as water in the pipeline blocks the passage of gas



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- **Lift the gas pipe so that the water can run back into the digester tank**



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- Lift the gas pipe so that the water can run back into the digester tank
- Check that the slurry is being pumped out smoothly into the slurry tank



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- **Ensure that slurry is emptied out of the slurry tank when it is full**



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- Ensure that slurry is emptied out of the slurry tank when it is full
- No inflammable items should be brought near the outlet pipe of the dome



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Another important thing to be done is that-



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Another important thing to be done is that-

- **Slurry in the digester tank should be removed once in three years**



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Another important thing to be done is that-

- **Slurry in the digester tank should be removed once in three years**
- **This is done by the mason**



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- **Repair section**



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- **Wait for a few minutes and light the burner**



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- Wait for a few minutes and light the burner
- This is to ensure that the gas inflow has stopped



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Maintenance and repair of the Biogas plant

Apart from what is mentioned-



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Apart from what is mentioned-

- **Periodic inspection of the plant is necessary**



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- **Inspection helps locate cracks on the surface of the digester tank**



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- Inspection helps locate cracks on the surface of the digester tank
- Else, Biogas can escape into the atmosphere through these cracks



Maintenance and repair of the Biogas plant

- Inspection helps locate cracks on the surface of the digester tank
- Else, Biogas can escape into the atmosphere through these cracks
- Hence, these cracks need to be sealed quickly



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Once in three years-



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Once in three years-

- **The mason repaints the inner wall of the digester tank**



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Once in three years-

- The mason repaints the inner wall of the digester tank
- Using White cement and synthetic resin adhesive mixture—
to seal cracks, if present



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To make this mixture use the following-



Maintenance and repair of the Biogas plant

To make this mixture use the following-

- 2 Ltrs of water



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To make this mixture use the following-

- 2 Ltrs of water
- 250 gms of Synthetic Resin Adhesive



Maintenance and repair of the Biogas plant

To make this mixture use the following-

- 2 Ltrs of water
- 250 gms of Synthetic Resin Adhesive
- 2 kgs of White cement



Summary



Summary

We have learnt different techniques to maintain and repair-



Summary

We have learnt different techniques to maintain and repair-

- **the Biogas plant**



Summary

We have learnt different techniques to maintain and repair-

- **the Biogas plant**
- **the Biogas burner**



Acknowledgements

- This video was created by Spoken Tutorial Project with inputs from Rural-ICT Project, IIT Bombay.
- More information on these projects can be found at these links

[http://spoken-tutorial.org /NMEICT-Intro](http://spoken-tutorial.org/NMEICT-Intro)

<http://ruralict.cse.iitb.ac.in>



Acknowledgement



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