

PERBEDAAN VOLUME DAN WAKTU AWAL PEMBENTUKAN BIO GAS DARI  
KOTORAN SAPI DENGAN DICAMPUR DAN TANPA DICAMPUR ENCENG  
GONDOK (*Eichhornia crassipes* Solms)

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Hampir semua penggunaan energi dan bentuk energi berpotensi untuk membuat perubahan lingkungan yang dapat mengakibatkan kerugian secara langsung maupun tidak langsung terhadap kesehatan manusia. Melihat kondisi yang ada maka dikembangkan energi alternatif yaitu bio gas. Penelitian ini bertujuan untuk mengetahui perbedaan volume dan waktu awal pembentukan bio gas dari kotoran sapi dengan dicampur dan tanpa dicampur enceng gondok (*Eichhornia crassipes* Solms). Penelitian ini menggunakan metode eksperimen semu (quasy experiment) dengan rancangan the static group comparison: without randomized control-group only design. Uji statistik dengan t Test Independent Sample dengan ketentuan penerimaan hipotesa alternatif ( $H_a$ ) dan penolakan hipotesa nol ( $H_0$ ) yaitu  $p \leq 0,05$ . Hasil uji statistik diperoleh hasil ada perbedaan volume dan waktu awal pembentukan bio gas dari kotoran sapi dengan dicampur dan tanpa dicampur enceng gondok ( $p=0,049$ ). Dari penelitian ini dapat disimpulkan bahwa terjadi perbedaan volume bio gas dari kotoran sapi dengan dicampur dan tanpa dicampur enceng gondok (*Eichhornia crassipes* Solms) yaitu volume harian bio gas unit A rata-rata 0,87 liter sedang unit B rata-rata 1,23 liter dan perbedaan total produksi bio gas selama penelitian sebesar 10,05 liter. Waktu awal pembentukan bio gas pada unit A terjadi hari ke 6 penelitian sedang unit B pada hari ke 4 penelitian. Peneliti memberikan saran pada masyarakat pedesaan yang kondisi lingkungan sekitarnya yang terganggu gulma enceng gondok sekaligus pemilik hewan ternak sapi untuk memanfaatkan teknologi bio gas dan peneliti lain untuk melakukan penelitian serupa dengan kajian yang lebih mendalam

**Kata Kunci:** bio gas, kotoran sapi, enceng gondok.

VOLUME AND EARLY FORMING TIME OF BIO GAS DIFFERENCE RESULTED  
COW DIRT MIXLY AND WITHOUT MINGLED BY WATER HYACINTH  
(*Eichhornia crassipes* Solms)

*Almost of all use energy and form energy have potency to make the enviromental change which can result the lost direcly and also indirectly to human being health. See the existing condition hence start developed alternative energy that is bio gas. This aim of this research is to know the volume and early forming time of bio gas difference resulted cow dirt mixly and without mingled by water hyacinth (*Eichhornia crassipes* Solms). This research use the sham experimen method (quasy experiment) with the device of the statuic group comparison : withour randomized control-group only design. Statistical test by t Test the Independent Sample with the rule of acceptance of alternative hypothesizing ( $H_a$ ) and hypothesizing deduction of zero ( $H_0$ ) that is  $p \leq 0,005$ . Result of test statistical obtained is volume and early forming time of bio gas difference from cow dirt mixly and without mingled by water hyacinth ( $p=0,049$ ). Hypothesis examination to prove their is volume and early forming time of bio gas difference resulted cow dirt mixly and without mingled by water hyacinth use test of Independent Samples Test , for early forming time of bio gas use the descriptive analysis. From statistical result by t Test the Independent Samples obtain a result there is difference of volume and time ealy forming of bio gas from cow dirt mixly and without mingled by water hyacinth (*Eichhornia crassipes* Solms) ( $p=0,049$ ). From this research inferential that happened by the difference of volume of bio gas resulted cow dirt mixly and without mingled by water hyacinth (*Eichhornia crassipes* Solms)tha is daily volume bio gas of unit A mean 0,87 litre unit B mean 1,23 litre and total difference produce the bio gas during research of equal to 10,05 litre. Time early forming of bio gas at unit A happened by the day to 6 research and unit B on the day to 4 research. Researcher give the suggestion to rural society which environmental condition vinicity annoyed by water hycinth gulma and also owner cow animal, dissimilar researcher and to do the similiar research too more circumstantial study.*

*Keyword : bio gas, cow dirt, water hyacinth*