

STUDI KUALITAS AIR SUMUR GALI DI SEMPADAN ANAK SUNGAI SORAGAN DUSUN SORAGAN BERDASARKAN PARAMETER MPN *ESCHERICHIA COLI*

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INTISARI

Latar Belakang: Air sumur gali masih menjadi sumber air yang digunakan masyarakat Dusun Soragan, Kalurahan Ngestiharjo, Kapanewon Kasihan, Kabupaten Bantul. Letak sumur yang berada di sempadan anak Sungai Soragan berpotensi mengalami pencemaran mikrobiologis akibat infiltrasi dari aliran sungai yang tercemar. Bakteri *Escherichia coli* digunakan sebagai indikator pencemaran fekal untuk menilai kualitas mikrobiologi air.

Tujuan: Mengetahui kualitas air sumur gali berdasarkan parameter *Escherichia coli*, mengukur jarak sumur terhadap anak Sungai Soragan, dan menilai konstruksi fisik sumur gali.

Metode: Penelitian ini merupakan penelitian deskriptif dengan pendekatan kuantitatif. Sampel penelitian berjumlah 10 sumur gali yang dipilih menggunakan teknik purposive sampling. Pemeriksaan *Escherichia coli* dilakukan di laboratorium menggunakan metode *Most Probable Number* (MPN), disertai pengukuran jarak sumur terhadap sungai dan inspeksi konstruksi fisik sumur.

Hasil: Sebanyak 6 sampel (60%) memenuhi syarat dan 4 sampel (40%) tidak memenuhi syarat berdasarkan Permenkes Nomor 2 Tahun 2023. Nilai *Escherichia coli* yang ditemukan pada sumur yaitu 2 MPN/100 ml, 3 MPN/100 ml, 7 MPN/100 ml, dan satu sampel TNTC (>200 MPN/100 ml). Air anak Sungai Soragan mengandung *Escherichia coli* sebesar 23.106 MPN/100 ml. Seluruh sumur berada pada jarak kurang dari 11 meter dari sungai dan secara umum memiliki konstruksi fisik yang baik.

Kesimpulan: Sebagian besar sumur memenuhi syarat kualitas mikrobiologi, namun 40% sampel masih terkontaminasi *Escherichia coli*. Tingginya kandungan *Escherichia coli* pada anak Sungai Soragan dan jarak sumur yang kurang dari 11 meter berpotensi meningkatkan risiko pencemaran mikrobiologis.

Kata Kunci: *Escherichia coli*, sumur gali, kualitas air, pencemaran mikrobiologis, Sungai Soragan.

**STUDY OF WELL WATER QUALITY IN THE BORDER OF THE
SORAGAN RIVER IN SORAGAN HALL BASED ON THE
MPN PARAMETERS OF ESCHERICHIA COLI**

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ABSTRACT

Background: Dug wells remain the primary water source for the community of Soragan Hamlet, Ngestiharjo Village, Kasihan Subdistrict, Bantul Regency. Located along the banks of a tributary of the Soragan River, these wells are at risk of microbiological contamination due to infiltration from the polluted river flow. Escherichia coli bacteria are used as an indicator of fecal contamination to assess the microbiological quality of the water.

Objective: Determining the quality of dug well water based on Escherichia coli levels, measuring the distance of the wells from the Soragan tributary, and assessing the physical construction of the dug wells.

Method: This study is a descriptive study using a quantitative approach. The study sample consisted of 10 dug wells selected using purposive sampling. Escherichia coli testing was conducted in the laboratory using the Most Probable Number (MPN) method, along with measurements of the distance between the wells and the river and an inspection of the physical condition of the wells.

Results: Total of 6 samples (60%) met the requirements, and 4 samples (40%) did not meet the requirements based on Ministry of Health Regulation No. 2 of 2023. The Escherichia coli levels found in the wells were 2 MPN/100 ml, 3 MPN/100 ml, 7 MPN/100 ml, and one TNTC sample (>200 MPN/100 ml). The water from the Soragan River tributary contained 23,106 MPN/100 ml of Escherichia coli. All wells are located less than 11 meters from the river and are generally in good physical condition.

Conclusion: Most of the wells meet microbiological quality standards, but 40% of the samples are still contaminated with Escherichia coli. The high levels of Escherichia coli in the Soragan tributary and the proximity of the wells less than 11 meters away have the potential to increase the risk of microbiological contamination.

Keywords: Escherichia coli, dug wells, water quality, microbiological contamination, Soragan River.