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ABSTRAK

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ANALISIS KUALITATIF PERAN JARAK SAWAH DAN KONSTRUKSI SUMUR DALAM REDUKSI KADAR NITRAT PADA AIR SUMUR GALI KELURAHAN KARANGANYAR KOTA TASIKMALAYA

Kontaminasi nitrat pada air sumur gali di kawasan pertanian Kelurahan Karanganyar menjadi ancaman kesehatan serius akibat penggunaan pupuk nitrogen yang intensif. Penelitian ini bertujuan menganalisis peran jarak sawah dan kualitas konstruksi sumur dalam mereduksi kadar nitrat melalui metode pelacakan (*tracking*). Jenis penelitian adalah kualitatif deskriptif dengan pendekatan observasional. Populasi dalam penelitian ini adalah seluruh sumur gali milik warga di Kelurahan Karanganyar. Sampel diambil menggunakan teknik *purposive sampling* sebanyak 5 sumur gali yang berdekatan dengan area persawahan. Variabel yang diteliti meliputi jarak sawah, kondisi fisik konstruksi sumur, dan kadar nitrat pada tiga titik sampel (air sawah, tanah, dan air sumur). Teknik pengumpulan data menggunakan observasi *checklist* SNI 03-2916-1992, pengukuran jarak, dan uji laboratorium, yang kemudian dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa tanah berfungsi sebagai media atenuasi alami, namun kualitas konstruksi sumur memegang peran yang lebih dominan dibandingkan faktor jarak. Sumur dengan konstruksi memenuhi syarat (MS) terbukti mampu mereduksi nitrat hingga kadar aman (0,9 mg/L) meskipun berada pada jarak berisiko (10 meter). Sebaliknya, sumur dengan jarak yang lebih jauh (20 meter) namun konstruksi buruk (TMS) justru mengalami pencemaran tinggi (27,2 mg/L). Disimpulkan bahwa konstruksi kedap air mampu memutus jalur infiltrasi pencemar. Disarankan agar masyarakat memprioritaskan perbaikan dinding sumur menjadi kedap air minimal 3 meter dari permukaan tanah.

Kata kunci: Jarak Sawah, Konstruksi Sumur, Sumur Gali, Kadar Nitrat.

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ABSTRACT

RIAN PRIYADI

QUALITATIVE ANALYSIS OF THE ROLE OF RICE FIELD DISTANCE AND WELL CONSTRUCTION IN REDUCING NITRATE LEVELS IN WELL WATER IN KARANGANYAR VILLAGE TASIKMALAYA CITY

Nitrate contamination in dug wells in the agricultural area of Karanganyar Village poses a serious health threat due to the intensive use of nitrogen fertilizers. This study aimed to analyze the role of rice field distance and well construction quality in reducing nitrate levels through tracking methods. The type of research is descriptive qualitative with an observational approach. The population in this study is all dug wells owned by residents in Karanganyar Village. Samples were taken using purposive sampling from five dug wells located near rice fields. The variables studied included the distance from the rice fields, the physical condition of the wells, and the nitrate levels at three sampling points (rice field water, soil, and well water). Data collection techniques used observation checklists SNI 03-2916-1992, distance measurements, and laboratory tests, which were then analyzed descriptively. The results of the study show that soil functions as a natural attenuation medium, but the quality of well construction plays a more dominant role than distance. Wells with proper construction (MS) were proven to be able to reduce nitrate to safe levels (0.9 mg/L) even though they were located at a risky distance (10 meters). Conversely, wells that were located further away (20 meters) but had poor construction (TMS) actually experienced high levels of contamination (27.2 mg/L). It was concluded that waterproof construction can block the infiltration of pollutants. It is recommended that the community prioritize repairing well walls to be waterproof at least 3 meters from the ground surface.

Keywords: Distance to Rice Fields, Well Construction, Dug Wells, Nitrate Levels