

RINGKASAN

Hubungan Kualitas Udara Ambien Dan Vektor Terhadap Gangguan keluhan Saluran Pernafasan Dan Saluran Pencernaan Sekitar TPA (Studi di TPA Mlajah Kabupaten Bangkalan)

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Tempat pembuangan akhir sampah mempunyai fungsi yang sangat penting, namun dapat menimbulkan dampak yaitu menurunnya kualitas lingkungan yang disebabkan karena tumpukan sampah menghasilkan berbagai polutan yang dapat menyebabkan pencemaran udara, air dan tanah sebagai tempat hidup berbagai vektor penyakit. Tempat pembuangan akhir sampah Bangkalan terletak di tepi jalan dan dekat dengan perumahan penduduk. Rumah-rumah penduduk tersebut tersebar di sebelah Barat dan Timur dari ujung TPA.

Tujuan penelitian ini adalah menganalisis hubungan kualitas udara ambien dan vektor terhadap gangguan keluhan saluran pernafasan dan saluran pencernaan di sekitar tempat pembuangan akhir sampah. Manfaat penelitian ini adalah sebagai masukan dan informasi serta memberikan gambaran mengenai kondisi lingkungan TPA sehingga dapat diciptakan teknologi baru dalam usaha pemanfaatan dan pengelolaan sampah yang ramah lingkungan.

Jenis penelitian ini adalah observasional. Lokasi penelitian terletak di Kelurahan Mlajah. Populasi dalam penelitian ini adalah penduduk yang bertempat tinggal di sebelah Barat dan Timur TPA. Populasi berjumlah 340 KK yang tersebar pada jarak 150m, 300m dan 450m. Pengambilan sample dilakukan secara cluster random sampling dengan rincian sebagai berikut : penduduk yang berkelompok pada jarak 150m dengan 16 KK, penduduk yang berkelompok pada jarak 300m dengan 10 KK dan penduduk yang berkelompok pada jarak 450 m dengan 9 KK. Sedangkan pengukuran kualitas udara, pengambilan sample ditentukan pada 6 (enam) titik yaitu di sebelah Timur pada jarak 150m, jarak 300m, dan 450m, sebelah Barat pada jarak 150m, jarak 300m dan jarak 450m, sedangkan sebelah Selatan adalah sungai dan Utara adalah sawah sehingga tidak dilakukan penelitian.

Hasil uji statistik menunjukkan bahwa kualitas udara sekitar Tempat Pembuangan Akhir Sampah yang diukur telah memenuhi syarat, dalam artian bahwa kualitas udara masih berada dibawah baku mutu. Sedangkan dari semua vektor yang diteliti diketahui bahwa hanya keberadaan kecoak yang mempunyai hubungan dengan keluhan subyektif terhadap mual, muntah akibat aktifitas TPA responden radius 150 m dari TPA dimana didapatkan signifikan chisquare 0,027.

Dari hasil penelitian ini dapat disimpulkan bahwa kualitas udara sekitar TPA secara umum belum melampaui baku mutu yang telah ditentukan, hanya gas H_2S terdeteksi melebihi NAB pada radius 150 meter dari TPA dengan arah angin dominan sehingga kualitas udara tidak berhubungan terhadap gangguan saluran pernafasan penduduk sekitar TPA. Kepadatan vektor lalat secara observasi digabungkan dengan wawancara kuesioner terhadap keluhan subyektif gangguan saluran pencernaan penduduk sekitar TPA tidak ditemukan hubungan, akan tetapi untuk keberadaan kecoak diketahui ada hubungan pada responden penduduk yang tinggal pada radius 150 m dari TPA terhadap keluhan subyektif mual/ muntah.

Dari hasil kesimpulan di dapat bahwa untuk menghindari gangguan saluran pernafasan akibat gas H_2S disarankan untuk perumahan minimal berjarak lebih dari 150 meter dari TPA sebagai daerah penyangga.

SUMMARY

The Relation of Ambient Air Quality and Vector to Digestive System and Upper Respiratory Tract Disturbances Around the Final Disposal Site (A Study at Mlajah Final Disposal Site in Bangkalan Regency)

Final disposal site has a crucial function due to the fact that it can decrease the quality of environment around the site with tons of garbage producing air, water, soil pollutions, and also the spot for vector's breeding. Bangkalan final disposal site is located at the bank of a public street and close to people housing compound. These houses are located spreading from the east and west of the tip of the site.

The aim of this research was to analyze the relation of ambient air quality and vector to Digestive System and Upper Respiratory Tract disturbances around the final disposal site. This study is beneficial to give information and input, besides it gives an overall view of the condition around the final disposal site. Expectantly, new technology can be invented for environment friendly waste disposal management.

This was an observational research with Mlajah district as research site. The population was inhabitants who lived at the east and west side of the final disposal site. The population was 340 families, spreaded out to radius 150 m, 300 m and 450 m. The sample was taken by cluster random sampling method consisted of: inhabitants at radius 150 m from the site (16 family heads), inhabitants at radius 300 m (10 family heads) and inhabitants at radius 450 m (9 family heads). Air measurement was done with six samples consisted of 3 sample-taking points at the east side with radius of 150 m, 300 m and 450 m, as for the west side, the sample-taking points were also at 150 m, 300 m, and 450 m. The south side of the final disposal site was a river and on the north side was rice fields, therefore no study or research was performed here. Chi-square was used to test the correlation.

Statistical test results revealed the measured air quality around the final disposal site had fulfilled the prerequisite criteria, qualified for the reason that it was under the threshold limit. From all observed vectors, only cockroach had a significant correlation with nauseous, vomit from respondents of 150 m distance ($p=0.027$).

It can be concluded from this research that in general, the air quality around the final disposal site had not passed the quality threshold. It also detected gas H_2S was over the threshold at radius 150 m from the site, yet because of the wind direction dominantly leaving away the site, there was no upper respiratory tract disturbance around the site. Fly vector density compiled with questionnaires and interviews for subjective complaints of digestive system disturbance had no correlation, while the existence of cockroach had a significant correlation with subjective complaints of nauseous, vomit at 150 m radius.

A suggestion for avoiding gas H_2S disturbance is to build houses at a minimal distance of more than 150 m from the site, thus providing a supportive area around the final disposal site.

ABSTRACT

The Relation of Ambient Air Quality and Vector to Digestive System and Upper Respiratory Tract Disturbances Around the Final Disposal Site (A Study at Mlajah Final Disposal Site in Bangkalan Regency)

Final Disposal Site can decrease the quality of environment around the site. Mlajah Final Disposal Site (FDS) in Bangkalan is located at the bank of a street and close to housing compounds. These houses are located spreading from the east and west of FDS's tip. The aim of this research was to analyze the relation of ambient air quality and vector to Digestive System and Upper Respiratory Tract disturbances around FDS.

This was an observational research with Mlajah district as research site. The population was inhabitants who lived at the east and west side of FDS. The population was 340 families, spreaded out to radius 150 m, 300 m and 450 m. The sample was taken by a cluster random sampling method consisted of inhabitants of radius 150 m (16 respondents), inhabitants of radius 300 m (10 respondents) and inhabitants of 450 m (9 respondents). Air measurement was done with six samples consisted of 3 sample-taking points at the east side with radius of 150 m, 300 m and 450 m, as for the west side, the sample-taking points were also at 150 m, 300 m, and 450 m. Chi-square was used to test the correlation.

Statistical test results revealed the measured air quality around FDS had fulfilled the prerequisite criteria, qualified for the reason that it was under the threshold limit. From all observed vectors, only cockroach had a significant correlation with nauseous, vomit from respondents of 150 m radius ($p=0.027$).

It can be concluded that in general, the air quality around FDS had not passed the quality threshold. It also detected gas H_2S was over the threshold at radius 150 m from the site, yet because of the wind direction dominantly leaving away the site, there was no upper respiratory tract disturbance around FDS.

A suggestion for avoiding gas H_2S disturbance is to build houses at a minimal distance of more than 150 m from the site, thus providing a supportive area around the final disposal site.

Key words: ambient air, vector, upper respiratory tract, digestive system tract