RINGKASAN

Dalam perancangan, evaluasi dan pengembangan sistem pengelolaan persampahan di suatu daerah dibutuhkan data mengenai timbulan, komposisi dan karakteristik sampah. Metode penentuan dan jumlah sampel timbulan dan komposisi sampah kota di Indonesia telah diatur berdasarkan SNI-19-3964-1994. Sesuai metoda SNI, penentuan timbulan dan komposisi sampah kota dilakukan terhadap semua sumber sampah yaitu domestik (rumah tangga) dan non domestik meliputi sampah komersil, institusi, pelayanan kota (sapuan jalan) dan industri.

Dalam penelitian ini dilakukan pengukuran timbulan, komposisi dan karakteristik sampah non domestik meliputi sampah komersil (pasar, toko, rumah makan dan hotel), sampah institusi (kantor, sekolah, rumah sakit), sampah penyapuan jalan dan sampah industri. Pengambilan sampel juga dilakukan pada musim kemarau dan musim hujan, sehingga dapat diketahui pengaruh musim terhadap timbulan, komposisi dan karakteristik sampah. Sampel sampah diambil delapan hari berturut-turut di lokasi yang telah ditentukan. Selanjutnya dilakukan pengukuran timbulan sampah dan komposisi sampah serta karakteristik fisik berupa faktor pemadatan dan berat jenis sampah langsung di lapangan, sedangkan untuk karakteristik kimia berupa penentuan kadar air (kelembaban), kadar volatil dan kadar abu, sampel sampah dianalisis di laboratorium.

Hasil penelitian menunjukkan timbulan rata-rata sampah non domestik kota Bukitinggi adalah 2,30 liter/orang/hari untuk satuan volume atau 0,88 kg/orang/hari untuk satuan berat.. Sedangkan berdasarkan musim tidak terdapat perbedaan yang signifikan antara timbulan sampah non domestik pada musim kemarau dengan musim hujan Rata-rata timbulan sampah non domestik perhari terbanyak adalah hari selasa dan kamis. Diprediksi timbulan sampah non domestik kota Bukitinggi 20 tahun yang akan datang (tahun 2027) sekitar 3,21 liter/org/hari.

Komposisi sampah non domestik kota Bukittinggi terdiri dari 97% sampah organik dan 3% sampah anorganik, dengan rincian sebagai berikut: 54% sampah makanan, 15% kertas, 11% plastik, 0,5% tekstil, 0,4% karet, 15% sampah halaman, dan 0,07% kayu. 0,6% kaca, 0,7% kaleng, 0,4% logam, dan 1,5% sampah lain-lain. Karakteristik fisik berupa faktor pemadatan sampah non domestik kota Bukittinggi adalah 1,46 dan berat jenis sampah 0,26

kg/liter. Karakteristik kimia secara analisis perkiraan didapatkan kelembapan sampah non domestik 55%, kadar volatil 37% dan kadar abu 8%.

Berdasarkan musim didapatkan timbulan, komposisi, dan faktor pemadatan sampah non domestik pada musim kemarau tidak jauh berbeda dengan musim hujan. Sedangkan berat jenis dan karakteristik kimia (*proximate analysis*) sampah non domestik berupa kelembapan dan kadar abu lebih tinggi pada musim hujan, sebaliknya pada musim kemarau kadar volatil sampah non domestik yang lebih tinggi.

Kajian pengolahan sampah yang didasarkan data timbulan, komposisi, dan karakteristik sampah non domestik Kota Bukittinggi didapatkan proses daur ulang untuk komponen sampah kertas (15%) dan plastik (11%), *composting* untuk sampah makanan dan sampah halaman (45%), dan pakan ternak untuk komponen sampah makanan (25%) dari sampah industri keripik, lebih tepat dilakukan di Kota Bukittinggi.

Kata kunci: sampah non domestik, timbulan, komposisi dan karakteristik sampah.

SUMMARY

To design, evaluate and develop the solid waste management system of certain area, some parameters should be known, such as generations, compositions and characteristics of solid waste. Sampling and measurement method of generation and composition of sample solid waste of urban area are carried out base on the SNI-19-3964-1994. In this method, generation and composition of solid waste are determined from all sources, i.e. domestics (households) and non domestics (commercials, institutions, city services and industries).

The aims of this research are to measure and determine generations, compositions and characteristics of non domestic solid waste in Bukittinggi city. The sources of solid waste cover commercial areas (markets, shops, restaurants and hotels), institutions (offices, schools, and hospitals), streets, and industries. Determining the amount of samples for primary data is based on the SNI-19-3964-1994. Samples are collected for eight days successively at dry season and wet season with sampling duration is 24 hours each. On sample solid waste, two kind of analysis are performed: field analysis and laboratorium analysis. Field analysis consists of generation and composition, and physical characteristics such as compaction factor and specific weight. Laboratorium analysis for chemical characteristics cover moisture, volatile matter and ash rates.

The result of analysis shows that average non domestic waste generation at Bukittinggi is 2,30 liter/person/day in volume unit or 0.88 kg/person/day in weight unit. There is no significant differences for solid waste generation between dry season and wet season. Tuesday and Thursday produces the highest average non domestic solid waste generation per day. Prediction waste generation of non domestic solid waste for the next twenty years (2027) is 3,21 liter/person/day.

The composition of non domestic solid waste on Bukittingi are 97 % of organic solid waste and 3 % of inorganic. The organics consist of food waste (54%), paper (15%), plastics (11%), wood/yard waste (15%), textiles (0.5%) and rubber (0.4%), while inorganics are metal (0.4%), glass (0.6%) and others (1.5%). As phisycal characteristic, compaction factor of Bukittinggi non domestic solid waste is 1.46 and specific weight is 0.26 kg/liter.

For chemical characteristics, proximate analysis shows that the solid waste has moisture 55%, volatile matter rate 37% and ash rate 8%.

Base on season, waste generation, composition, compaction factor of Bukitinggi non domestic solid waste is not different between two seasons. But spesific gravity and chemical characteristic (proximate analysis) of non domestic solid waste which form moisture and ash rate increase on wet season, while volatile matter raises on dry season.

From the analysis of solid waste generation, composition and characteristics, we can suggest three kinds of solid waste processing. They are composting (for food waste and yard waste),) recycling (for paper and plastics) and hog feeding for food waste from indutrial waste.

Keywords: non domestic solid waste, generation, composition and characteristics of solid waste.