PRODUKSI PADI PADA MEDIA SEDIMEN BENDUNGAN BILI-BILI DAN TANAH
SAWAH, KABUPATEN GOWA

Rice Production on Sediments Media of Bili-Bili Dam and Rice Field Soils in Gowa District

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ABSTRACT

Landslide that occurred on the caldera of Mt.Bawakaraeng 2004, causing material from Mt.Bawakaraeng dominated the Jeneberang river flow and into the Bili-Bili dam. The results of measurements in May 2009 showed that sediment elevation is located at elevation 63.08 m, which is 17 m above the normal threshold. It will be a serious problem if not addressed, which could cause flooding in Makassar City and the surrounding areas.

Control the increasing volume of sediment carried by the dredging plan to reduce sediment. The area of the planned dredging of sediments is 15,625 m² (125 x 125) m, with dredging volume up to 100,000 m³ per month. Dredging of sediment would be placed in the sediment pond which will be transported to disposal area. However, a large volume of sediment dredging creates new problems, because of limited land holding.

Sediment samples taken at the Bili-Bili dam intake, and the paddy soil sample sites located in the Bili-Bili village, Bontomarannu sub district, Gowa. Planting conducted in the experimental garden, Faculty of Agriculture, Hasanuddin University. Analyzes were conducted on Soil Chemistry Lab. of Department of Soil Science, Faculty of Agriculture, Hasanuddin University.

Statistical analysis was done by testing the test consisting of two treatments of planting media, ie: S = Sediment and T = rice field soils. Each treatment was repeated 3 times, so there are 6 experiments cabin with each of the nine clumps of plants.

Production of rice plants grown on media Bili-Bili dam sediments is higher than that grown in paddy soil media. Serially, each production of the average of grain weight of 21.47 g /clump or 7.1 ton / ha and 19.79 g /clump or 6.6 ton / ha. Use of media should be added organic matter to the sediment to improve the physical, chemical, and biological characteristics.

Keywords: sediment, Bili-Bili Dam, Rice Plant, Paddy Soil
SEDIMENTASI DI SUNGAI JENEBERANG DAN WADUK BILI-BILI AKIBAT LONGSOR DI DAS JENEBERANG

Sedimentation in Jeneberang River and Bili-Bili Reservoir as Impact Landslide on Jeneberang Watershed

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ABSTRACT

Collapsed of Caldera-wall of Mt. Bawakaraeng occurred on March 26, 2004. The caldera is situated at elevation 2,600 m above MSL and is the headwaters of Jeneberang river. The volume of collapsed mass was estimated 200 – 3000 million M$^3$ and it closed Jeneberang river channel along 7 km. One month after the collapsed, mud flow occurred and covered paddy field along the Jeneberang river. Up to now the mud flow frequently occurred, especially in the rainy season. The river discharge containing a high density of sediment has been flowing down into Bili-Bili reservoir and it is anticipated that its lifetime would be shorter and the water quality of municipal water would be deteriorated.

Keywords: Mt. Bawakaraeng, Mudflow, Bilibili dam
DEGRADASI LAHAN TERKAIT PENGELOLAAN PERKEBUNAN INTI RAKYAT

Evaluation and Status of Sustainable Palm Oil Management in PT.Perkebunan Nusantara VII Muara Enim, South Sumatera

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ABSTRACT

In general Enim Muara district can be classified as low-lying areas, approximately 42.23 percent of the area of Muara Enim district is in the form of red-yellow padzolik, followed Alluvial approximately 26.03 percent of the total area. Podzolik red-yellow soil and Alluvial, mainly scattered around the Cape District Court, Muara Enim, Talang Ubi and Gelumbang. Characteristics of degraded land is generally measured by comparing the non-degraded land is forest land. Comparison of forest land as a non-degraded land because it has a closed cycle means that all the nutrients in the forest soil system spin and very little is lost or out of the system. Inheritance in the land to non-forest uses, oil palm plantations in Indonesia, 60% of the soil is podzolic soil (Ultisols). This soil has low fertility status, because KTKnya low (<15 to 100 g-1), C-organic content of <1%, mineral reserves are low, low pH (<5), the level is very high erodibility and washing (Koedadi and Adiwiganda, 1998). System monitoring and soil sampling was purposive sampling, the observed number of plots and soil samples taken as follows:
1. Forest area (H), as many as 9 next
2. River Garden region lengi core Core (Li), a total of: 71 samples
3. River Garden region Lengi plasma Plasma (La) 35 sampling
4. Niru River Garden region (Ni) A total of 17 samples
   - Planting Years 1983 and 1984

Soil samples taken at depths of 0-20 cm, 20-40 cm and 40-60 cm with the local slope belgi drill the top, middle and bottom, and then analyzed in the laboratory parameters to evaluate the level of soil degradation is H2O, C-organic, N -Total, content of phosphorus. The content of C-Organic, total N, P and K in the higher at the upper, middle and lower planting in 1987, 1988 and 1989. 2. Degradation continued to increase over the three years of observation, the rate of loss of C and N in 1989 was higher than in 1988 and 1987. 3. Degraded soil in a layer 20 cm of the soil surface, which indicates the degradation caused by erosion of the soil surface layer

Keywords: Characteristics of degraded land, level of soil degradation, purposive sampling,
Humic substances in the form of salts is very effective to improving soil fertility and plant growth. This due to the large value of the carboxyl and phenolic groups contained in humic substances. Humic substances are produced from different sources will affect the content of the functional group. Therefore this research aims to study the functional group content of humic substances from various sources and analyze the factors that influence the level of functional group content of humic substances. The method used in this study are extraction of humic substances from organic materials by alkaline, calculation value of functional group content by titration and compared the results with the results of previous studies to determine the factors that influence it. The results show that the high and low content of the functional group of humic substances are influenced by two factor namely time factor and factor of the type of organic material that decomposes.

Keywords: humic substances, functional group, time, type of organic material
ANALISIS LAJU DAN SEBARAN EROSI PADA DAERAH ALIRAN SUNGAI BAUBAU

Analysis of the Rate and Distribution of Erosion in the Baubau Watershed

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ABSTRACT

The purpose of this study was to develop a model to estimate spatial distribution of erosion rates that can be used for a reference in the design of erosion and sedimentation controls in the watershed of Baubau, which is the most important part of Baubau City. Soil erosion was analysed using USLE (Universal SoilLoss Equation), in a Geographic Information Systems (GIS), to obtain the value of potential erosion on a spatial basis. The analysis showed that the amount of potential erosion between 150 to 250 tonnes/ha/year occupies the largest area, which is about 2,960 ha, while the erosion rate of more than 250 tonnes/ha/year occupies an area of 446 ha. Then, the rate less than 50 tonnes/ha/year occurred on areas of approximately 1,590 ha, which is mainly found in urban areas. The dominant area of 100 meter buffer zone experiences erosion rate of less than 50 tonnes/ha/year. The results of this analysis remains to be one by calculating the actual erosion after considering such factors as vegetation cover and conservation measures, which can be obtained through analysis of satellite imagery.

Keywords: GIS, Erosion, Model, Conservation
IDENTIFIKASI MIKROBA DALAM MIKROORGANISME LOKAL (MOL) YANG DIGUNAKAN SEBAGAI BIODEKOMPOSER BAHAN ORGANIK

Microbial Identification in Local Microorganisms (LMO) as Used in Organic Matter Biodekomposer

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ABSTRACT

Use of Local Microorganism (LMO) as bioactivator that can be created and applied directly by farmers. The aims of the study was to determine and identify microbes and nutrients contained in LMO papaya and LMO Rice. Identification of microbial physiology conducted by the method of Schaad et al. (2001). For the fungi, identification was based on morphological characters colony. The results of microbial identification contained in LOM papaya is a bacterial Basillus sp., Streptomyces sp. (Aktinomycetes) and the fungus Aspergillus niger. While the LMO rice identified the bacteria Basillus sp., Pseudomonas sp., Streptomyces sp. (Aktinomycetes) and the fungus A. niger. Microbes are very involved in to play role the process of organic matter decomposition and the biochemical processes in the soil.

Keywords: Local Microorganism, Compost, Microbes identification
Contribution of Organic Fertilizer on Paddy Soil to Rice Productivity (Oryza Sativa L.) in Turikale Distric of Maros Regency

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ABSTRACT

Until now and the future use for organic fertilizers will developed for agriculture, especially are excellent for rice. This fertilizers are characterized by relatively low content of macro and micro nutrients, slow nutrient availability and providing limited nutrients. Furthermore, organic fertilizers can improve soil physical, chemical, biological and environment friendly. The experiment was conducted in wet-field rice has the farmers in Maros Regency. This experiment objectives was to know the effect of organic fertilizers applicate to rice (Oryza sativa) growth. The wet-field rice size eachs of treatments are 40 m². The treatments of organic fertilizaters applicate are consist of 1.000 kg/ha (A), 750 kg/ha (B), 500 kg/ha (C), 250 kg/ha (D) and without organic fertilizer (E), eachs of treatments with four replicate. Twenty soil samples were collected and analyzed at soil laboratory for soil texture, pH, organic carbon, N total, P₂O₅, and K₂O. These lines were evaluated based on plant performance, including plant height, number of filled and yield. The result of this experiment showed that organic fertilizers applicate can increase of rice production is significantly (P<0,05). The highest rice production is obtained of A treatment (33,47 kg/plot or 8367,18 kg/ha).

Keywords: Organic fertilizers, Wet-field, Rice (oryza sativa L), Production
The Pedogenesis Study Around Tempe Lake Influenced by Catchman Area Bila-Walanae South Sulawesi

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ABSTRACT

The pedogenesis study at north and west sides of Tempe Lake, South Sulawesi has been done to learn soil characteristics that formed from differences of rock unit and topography, sediment material sources and the soil potential surrounding Tempe Lake. Represent profile choosen based on the height, slope, and rock unit. At the north side, follows Kalempang River: soil profile U.1 (110 msl, 20%, papal and limestone); U.2 (50 msl, 10%, conglomerate); U.3 (25 msl, 3%, alluvium sediment); U.4 (5 msl, <3%, alluvium sediment). At the west side, follows Batu-batu River: soil profile B.1 (140 msl, 20%, breksi and lava); B.2 (60 msl, 15%, sedimentary rock); B.3 (20 msl, 3%, alluvium sediment); B.4 (5 msl, <3%, alluvium sediment). Study realization including morphology identification in field, chemical and physical properties laboratory analysis, and soil mineralogy, also data analysis use the similarity index. The result shows that soil characteristics formed at two topolithosequence sides are different, both between profiles at the same sequence and between profiles at the different sequence. Majority for: soil texture, cation exchange capacity, C/N ratio, C-organic distribution pattern, clay distribution pattern, clay minerals, and sand fraction distribution pattern. Soil development rate in the west side topolithosequence is more real compared with its at north side, shown by the result of morphology characteristic identification (the solum thickness), clay content really increase laterally (down the slope) and Ca/Mg ratio, down laterally; and the presence of clay kaolinite mineral. At north side, between one profile and the others, it doesn't show any relation of development soil rate, while at west side, it appears. It means that the weathering process at north side is "in situ", while at west side, it's transported (translocation lateral). Another indication, and supported by the similarity index calculation result of sand fraction minerals of soil profile U.3, U.4, B.3, and B.4, found the sediment material source that fill depression area at Tempe Lake, mostly came from north side. The overall result, that shown from the characteristic differences and soil properties of west and north sides topolithosequence, affect soil potential in depression area at Tempe Lake differently. The soil fertility potential at north side is better than its at west side, particularly shown from the calculation result of base saturation.

Keywords: Pedogenesis, Tempe Lake, soil fertility, morphology, clay
SOIL PROPERTIES, CLASSIFICATION AND THEIR DISTRIBUTION ALONG THE TOPOSEQUENCES OF HERRMANNS SUB-CATCHMENT OF SOUTH AUSTRALIA

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ABSTRAK


Keywords: Soil properties, Salin, Sodic, soil classification