

## ABSTRAK

Di bidang teknik sipil tanah merupakan tempat berdirinya fondasi atau sebagai penahan dari bangunan yang berada di atasnya. Tanah merupakan tempat berdirinya berbagai macam jenis konstruksi atau struktur, baik struktur bangunan gedung, bendung, ataupun jalan, yang sering menjadi masalah jika tanah itu sendiri memiliki sifat-sifat buruk seperti plastisitas tinggi, potensi kembang susut yang tinggi, dan kuat geser yang rendah atau lemah.

Pengujian di laboratorium meliputi 2 tahap yaitu pengujian sifat fisik dan mekanik tanah asli serta untuk mengetahui pengaruh nilai kohesi, sudut geser dalam, serta koefisien konsolidasi setelah dilakukan pencampuran dengan bahan aditif. Bahan aditif yang digunakan untuk stabilisasi berupa kapur dan Matos *stabilizer*. Penambahan kapur sebesar 10% dan Matos variasi 4%, 6%, dan 8% dengan pemeraman 7, 14, dan 30 hari.

Hasil penelitian tanah gambut Rawapening memiliki kandungan air sebesar 551,326% dan kadar air optimum sebesar 127,5%, berat volume basah sebesar 1,03 gr/cm<sup>3</sup>, berat jenis sebesar 1,12, kadar serat sebesar 50,07%, kadar abu sebesar 22,75%, kadar organik sebesar 77,25%, dan angka pori sebesar 7,112. Kuat geser tanah asli sebesar 1,11885 kg/cm<sup>2</sup>, dengan kohesi sebesar 0,6939 kg/cm<sup>2</sup>, dan sudut geser dalam sebesar 31,63348° dan indeks kompresi sebesar 0,9685807 dengan nilai Pc sebesar 1,5775 kg/cm<sup>2</sup>. Setelah distabilisasi dengan campuran, kuat geser tanah meningkat sebesar 54,358% atau sebesar 1,72704 kg/cm<sup>2</sup> pada stabilisasi tanah gambut dengan 10% kapur dan 4% matos pada pemeraman selama 30 hari, dengan nilai kohesi sebesar 0,53933 kg/cm<sup>2</sup> dan nilai sudut geser dalam sebesar 49,89193°, indeks kompresi terkecil sebesar 0,51405 atau menurun sebesar 46,93% pada campuran 10% kapur dan 6% matos, dengan nilai Pc sebesar 2,4225.

**Kata Kunci : Gambut, Kohesi, Sudut Geser Dalam, Konsolidasi, Kapur, Matos**

## **ABSTRACT**

*Soil is the place where foundation of many construction standing on in civil engineering. Many structure such as building construction dam construction, or road, which cause some distinctive problems frequently if the soil itself has characters such as high plasticity, high swelling potential, and very weak shear force.*

*There are 2 phases that is tested in laboratory, they are physical and mechanical characters of the existing soil and also to know how that characters effect the cohesion, friction angle and consolidation coefficient after making some mixture of lime and matos soil stabilizer. The variation of content for the mixtures are 10% lime for all stabilization and 4%, 6%, 8% of matos soil stabilizer with 7, 14 and 30 days of curing period.*

*All the tests that have been done for peat soil of Rawapening conclude that the water content is in the amount of 551,326%, optimum water content is the amount of 127,5%, unit weight is in the amount of 1,03gr/cm<sup>3</sup>, particle density is in the amount of 1,12, fabric content is in the amount of 50,07%, ash content is in the amount of 22,75%, organic content is in the amount of 77,25% and number of void is in the amount of 7,112. The existing soil shear strenth is 1,11885 kg/cm<sup>2</sup>, with cohesion value of 0,6939 kg/cm<sup>2</sup> and friction angle of 31,63348° and compression indeks of 0,96858 with Pc value of 1,5775 kg/cm<sup>2</sup>. After stabilized with the mixture, the shear strength value increased by 54,335% or in the value of 1,72704 kg/cm<sup>2</sup> in the stabilization of peat soil by adding 10% of lime content and 4% of matos content in the curing period of 30 days with cohesion value of 0,53933 kg/cm<sup>2</sup> and friction angle of 49,89193°. As the result of consolidation tests obtained 0,4091617 of compression index in 10% lime and 6% matos additions mixture on 2,86 of Pc value.*

**Keyword : Peat soil, Cohesion, Friction Angle, Consolidation, Lime, Matos**