

(R) ACD-4895

INVO MSA 23/10/97

DETERMINATION OF INFILTRATION CHARACTERISTICS
OF SOILS OF VARIOUS LANDUSES USING DRIP-TYPE
RAINFALL SIMULATOR IN THE HULU SELANGOR AREA,
SELANGOR, MALAYSIA

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A507342441

DISSERTATION PRESENTED FOR THE
DEGREE OF MASTER OF SCIENCE
UNIVERSITY MALAYA
KUALA LUMPUR
1996

14.08.2000
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ACKNOWLEDGEMENTS

The author gratefully acknowledges a great obligation and gratitude to Associate Professor Dr.Hamirdin Ithnin for his approval of this study on infiltration characteristics of soils of various landuses, and also for his inspired teaching, his critical but constructive comments on the manuscript, his continuous encouragement and valuable suggestions, which are too numerous to list out.

I would also like to thank Mr. Mat Omar Johari for his painstaking proof reading of the manuscript.

My gratitude also goes to those whose efforts have always been invaluable in the preparation of this thesis, especially :-

1. Mr.Kuseri of Dept. of Geography, University of Malaya
2. Mr.Abdul Hakim Majid of Felda Gedangsa
3. Staff of the Dept. of Forestry, Rawang, Selangor.

ABSTRACT

The rationale of this study is that land clearing and changes in vegetation, have influenced soil physical properties to such an extent that an important measure, the infiltration rate, is greatly affected. The determination of infiltration rates have been done using the drip-type rainfall simulator. It has been found that the infiltration rates of soils of various landuses are as follows:

Landuse	IR (cm/hr)
1. Forest (control)	20.97
2. Rubber, 20 Year-old	20.98
3. Oil Palm, 20 Year-old	20.42
4. Rubber, 7 Year-old	7.99
5. Oil Palm, 7 Year-old	8.14
6. Bare Soil, 5 Year-old	4.61
7. Bare Soil, 1 Year-old	6.41

The study also found that there exists a close relationship between infiltration rates and soil physical properties, namely the soil bulk density, total pore space, organic matter content and soil stability index. The correlation coefficient of the relationship ranged from 0.86 to 0.96 (using simple regression technique).

ABSTRAK

Rasional kajian ini adalah pemugaran dan perubahan jenis tumbuhan, telah mempengaruhi sifat-sifat fizikal tanah ke tahap di mana kadar infiltrasi telah dipengaruhi dengan banyaknya. Penentuan kadar-kadar infiltrasi ke atas pelbagai jenis gunatanah telah dilakukan dengan simulator jenis-titis. Didapati bahawa kadar-kadar infiltrasi adalah seperti berikut:

Gunatanah	Kadar infiltrasi (sm/j)
1. Hutan (kawalan)	20.97
2. Getah, 20 tahun	20.98
3. Kelapa sawit, 20 tahun	20.42
4. Getah, 7 tahun	7.99
5. Kelapa sawit, 7 tahun	8.14
6. Tanah terdedah, 5 tahun	4.61
7. Tanah terdedah, 1 tahun	6.41

Kajian juga mendapati terdapatnya hubungan rapat antara kadar infiltrasi dan sifat tanah iaitu ketumpatan pukal tanah, ruang liang total, kandungan bahan organik dan indek kestabilan tanah. Kofisien korelasi perhubungan adalah berjulat dari 0.86 hingga 0.96 (teknik regrasi mudah).

ABBREVIATION

IR	Infiltration Rate
SBD	Soil Bulk Density
TPS	Total Pore Space
OMatter	Organic Matter Content
SIndex	Stability Index
Oil Palm 20yr	Oil Palm 20 Year-old
Oil Palm 7yr	Oil Palm 7 year-old
Rubber 20yr	Rubber 20 Year-old
Rubber 7yr	Rubber 7 year-old
Bare5	Bare Soil 5 Year-old
Bare1	Bare Soil 1 Year-old

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