CHAPTER FIVE RESULTS

5.1 Soil Bulk Density

Means values of soil bulk density of soils of the various landuses are shown in Table 5.1.

Table 5.1: Mean Values of Soils Bulk Density (sbd) of Soils of the Various Landuses

Type of landuse	sbd g/cc	std.dev	CV
Forest	1.04	0.023	0.022
Rubber, 20yr	1.21	0.035	0.028
Oil palm, 20yr	1.24	0.023	0.019
Rubber, 7yr	1.49	0.047	0.032
Oil palm, 7yr	1.53	0.059	0.038
Bare soil, 5yr	1.62	0.032	0.019
Bare soil, 1yr	1.60	0.06	0.037

5.3 Soil Total Pore Space

Means total pore space (%) of soil of various landuses are shown in Table 5.2.

Table 5.2: Mean Total Pore Space (tps) of Soils of the Various Landuses

Type of landuse	Mean tps (%)	std.dev	CV
Forest	60.74	0.884	0.014
Rubber, 20yr	54.33	1.335	0.024
Oil palm, 20yr	53.20	0.903	0.016
Rubber, 7yr	43.76	1.81	0.041
Oil palm, 7yr	42.26	2.24	0.053
Bare soil, 5yr	38.86	1.193	0.03
Bare soil, 1yr	39.61	2.278	0.057

5.4 Soil Organic Matter Content

The organic matter content of soils of the various landuses are shown in Table 5.3.

Table 5.3: Mean Organic Matter Content of Soils of the Various Landuses

Type of landuse	Mean organic matter content (%)	std.dev	CV
Forest	2.27	0.051	0.022
Rubber, 20yr	1.39	0.045	0.032
Oil palm, 20yr	1.93	0.041	0.02
Rubber, 7yr	1.02	0.055	0.053
Oil palm, 7yr	1.00	0.084	0.084
Bare soil, 5yr	0.09	0.025	0.277
Bare soil, 1yr	0.67	0.05	0.074

5.5 Soil Stability Index

The mean values of soil stability index are shown in Table 5.4.

Table 5.4: Mean Soil Stability Index of Various Landuses

Type of landuse	Mean stability index	std.dev	CV
Forest	1.32	0.027	0.02
Rubber, 20yr	1.46	0.025	0.017
Oil palm, 20yr	1.19	0.02	0.016
Rubber, 7yr	0.96	0.013	0.013
Oil palm, 7yr	0.88	0.016	0.018
Bare soil, 5yr	0.34	0.014	0.041
Bare soil, 1yr	0.52	0.019	0.036

5.6 Infiltration Rates of Various Landuses

After a laborious calculations to determine the infiltration rates of soils under various landuses were done, results were achieved as shown by Table 5.5.

Table 5.5: Infiltration Rates of Soils of Various Landuses

Type of landuse	IR, average cm/hr	std.dev	CV
Forest	20.97	0.0075	0.0003
Rubber, 20yr	20.98	0.0089	0.0004
Oil palm, 20yr	20.42	0.04	0.002
Rubber, 7yr	7.97	0.58	0.073
Oil palm, 7yr	8.14	1.2	0.148
Bare soil, 5yr	4.61	0.82	0.178
Bare soil, 1yr	6.41	0.46	0.071

5.7 Conclusion

Results of infiltration rates of soils of the various landuses in general show a great variability in values according to types of landuses. Infiltration rates are greatest in forest, and in 20 year-old rubber and 20 year-old oil palm vegetation cover. It is lowest on 5 year-old bare soil. Results on soil physical properties has taken into account the soil bulk density, total pore space, organic matter content and soil stability index. These physical properties are of importance in affecting the infiltration rates of soils of the various landuses.