

APBI 402 / SOIL 502

Jan 4, 2016

1

Course objective

- To apply fundamental soil science principles in sustainable management of forested, agricultural, and urban / constructed ecosystems

2

Approach

- To simulate a real-life approach in evaluating soil properties to establish the most appropriate management practice

3

Learning outcome no. 1

- Describe processes of soil genesis, recognize diagnostic features of soils, and relate management practices to info available in soil surveys

4

Example – Pineview soil

- Orthic Gray Luvisol
- Lacustrine deposits overlying glacial till
- Clay–silty clay (topsoil) to heavy clay (at depth)
- 2.5-4.5% SOM by wt. (A horizons)
- CEC: 20 cmol_c/kg soil (A horizons), 30 cmol_c/kg soil (Bt)
- Strongly - moderately acidic (A, B horizons), neutral - slightly alkaline (C horizon)

5

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6

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Poor water infiltration
Poor aeration
High water holding capacity
Poor trafficability
Restrictive to root growth

7

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Good ability to retain & supply nutrients
High buffering capacity

8

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Soil biota:
In A & B horizons - more fungi than bacteria / actinomycetes

9
