READING GUIDE*

Andisols

see Buol et al. (2011), Chapter 9, p. 249-264

OBJECTIVE: *To understand the nature and properties of soils classified as Andisols, to know the potential uses and limitations of these soils, and to recognize the taxa associated with Andisols in* Soil Taxonomy*.*

1. What is the central concept for soils classified as Andisols?
2. What are *short-range-order* compounds? Which are common in soils classified as Andisols?
3. In what soil forming environments are Andisols most commonly found?
4. What percentage of the land area of the planet is occupied by Andisols?
5. **Why are soils found on older volcanic parent materials often not classified as Andisols?**
6. Explain why Andisols are found in each of the following settings. Be sure to specify the pedogenic processes that occur (or do not occur) to promote the occurrence of Andisols. (a) recent volcanic parent materials.
7. What factors may influence the properties of volcanic deposits (such as thickness, particle size distribution, mineralogic composition)? Be specific.
8. What is *vitric material*? Why is it prevalent in volcanic ash deposits?
9. How do the weathering products o f volcanic ash deposits (tephra) differ from those of other mineral soils? What factors influence the nature of these weathering products?
10. Why do aluminum and aluminum-humus complexes accumulate in the surface horizons of some Andisols? How does this influence use and management of the soils?
11. Describe some of the pedogenic processes that occur commonly in both Andisols and Spodosols.
12. What are *andic soil properties*? Be specific.
13. What types of land use problems may be associated with soils classified as Andisols? Explain why land use practices may be limited. Be specific.
14. What land use practices are commonly supported by soils classified as Andisols?
15. What suborders are identified for soils classified as Andisols? What are the diagnostic properties of each?
16. What properties are used to distinguish the great groups of soils classified as Andisols?

SYNTHESIS:

17. Why are unique family particle size and mineralogy criteria used with Andisols? List examples of each.

* *Questions in plain type represent basic facts and concepts. Questions in **bold** type are those that are answered in the text but require more careful consideration. The Synthesis questions at the end help you apply the facts and concepts to a relevant issue.*