READING GUIDE*

Aridisols

see Buol et al. (2011), Chapter 10, p. 265-281

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

1. What is the central concept for soils classified as Aridisols?
2. What are the characteristics of the aridic soil moisture regime (i.e., how is the aridic soil moisture regime defined)?
3. In what soil forming environments are Aridisols most commonly found?
4. What percentage of the land area of the planet is occupied by Aridisols? What percentage of arid areas are occupied by Aridisols? **Why is the percentage of Aridisols in arid areas not 100%?**
5. What are possible explanations for observed evidence of deep leaching (relative to the current soil moisture regime) in soils classified as Aridisols?
6. Explain why Aridisols 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 Aridisols. (a) hot, dry climates, (b) cold climates.
7. Define and explain the significances of each of the following surface features commonly found in desert regions: (i) soil crusts, (ii) microbiotic crusts, (iii) vesicular horizons, (iv) desert pavement.
8. Why does the depth to the top of the calcic horizon become deeper with increasing rainfall? Why is this trend not seen with petrocalcic horizons?
9. How does atmospheric deposition of particulate matter (dust) influence the pedogenesis and soil morphology of many Aridisols? Be specific.
10. How is a duripan distinguished from a petrocalcic horizon?
11. What types of land use problems may be associated with soils classified as Aridisols? Explain why land use practices may be limited. Be specific.
12. What land use practices are commonly supported by soils classified as Aridisols?
13. What suborders are identified for soils classified as Aridisols? What are the diagnostic properties of each?
14. What properties are used to distinguish the great groups of soils classified as Aridisols?

SYNTHESIS:

15. How does the accumulation of calcium carbonate progresses over time? Describe how and where carbonates precipitate in the soil and what conditions promote this accumulation of secondary carbonates.

* *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.*