

READING GUIDE*

Ultisols

see Buol et al. (2011), Chapter 18, p. 375-384

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

1. What is the central concept for soils classified as Ultisols? **How do Ultisols differ from Alfisols?**
2. In what soil forming environments are Ultisols most commonly found?
3. Explain why Ultisols 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 Ultisols. (a) stable uplands in humid tropical and subtropical climates, (b) acidic parent materials, (c) deciduous forests, (d) coastal plains.
4. **What are the diagnostic properties of a kandic horizon? Why are kandic horizons more likely to be found in Ultisols than in Alfisols? Explain your answer. Be specific.**
5. Why might neosynthesis be a more important process than lessivage in the formation of argillic (or kandic) horizons in Ultisols?
6. Why are argillans less apparent in Ultisols (compared to Alfisols or other soils with argillic horizons)?
7. Why are thick, sandy surface horizons more common in Ultisols than Alfisols?
8. In what ways are plinthite and a fragipan similar? How can plinthite be distinguished from a fragipan?
9. What properties may be associated with Ultisols?
10. What types of land use problems may be associated with soils classified as Ultisols? Explain why land use practices may be limited. Be specific.
11. What land use practices are commonly supported by soils classified as Ultisols? Why is timber production more prominent than crop production?
12. Which diagnostic horizons may be found in soils classified as Ultisols?
13. What suborders are identified for soils classified as Ultisols? What are the diagnostic properties of each?
14. What properties are used to distinguish the great groups of soils classified as Ultisols?
15. How is the thickness of the argillic or kandic horizon recognized in *Soil Taxonomy*?
16. Why might some Ultisols ("Rhodic" Ultisols) develop darker, redder colors? Explain your answer.

SYNTHESIS:

17. Where in West Virginia are soils classified as Ultisols likely to be found? What are the suitabilities and limitations of these soils for various land uses?

* 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.