

|   |  |   |
|---|--|---|
|  <p>2015<br/>Internationales<br/>Jahr des Bodens</p> | <h2 style="text-align: center;">Soil of the Year 2006:<br/>Albic Luvisol (“Fahlerde”)</h2> |  |
|---|--|---|

The proposal was submitted by K. Billwitz, Greifswald, und P. Kühn, Tübingen

Curatorship Soil of the Year



### Characteristics

**International classification (WRB): Haplic Albeluvisol or Albic Luvisol**

**German classification: Lessive or Fahlerde.**

### **How are these soils formed and named?**

By looking at the soils in Mecklenburg- Western Pomerania, the history of Albic Luvisol's can be explained. During the late Vistula Glacial period, the advance of the glaciers passed through this area. About 11,000 years ago, the melting ice left behind glacial till, which formed the so-called „Velgaster Rückzugsstaffel“.

The development of the Albic Luvisol was initiated already at the end of the last glacial period. Within this glacial period, moraines were mixed with wind-blown sand to become glacial clay sand,

with a present thickness of about 50 cm. The main reason for this mixing was cryoturbation through alternating thawing and freezing cycles. At the same time, carbonates were leached out. Presently, the decalcification depth has reached about 150 cm. The establishment of the first pioneer plants created the first input of and accumulation of organic matter in the top soil. After decalcification, soil-forming processes followed, such as: clay formation, browning, depletion of bases, and clay movement. The warming climate promoted the expansion of beech-oak-forests and enhanced the soil forming processes.

Typical and famous for the Albic Luvisol are the lightened “pale/albic” horizon in the top soil caused by the leaching of depleted clay. Today, where these soils are under forest cover are strongly acidified. Therefore, clay movement has been stopped and mold is the primary humus form.

### **What is the functional relevance of these soils for humans and the environment?**

Today, Albic Luvisols are fertile soils with stable yield potential. They are mainly used for arable or forest land use. They are suitable for oilseed rape, winter barley, winter wheat, and beet crops. Usually, they have a good water holding capacity and drainage properties, in addition to showing a stable biodiversity.

The soils show some evidence for the different phases of the glacial period and human settlements with arable land use from nearly 4000 years ago.

### **What are the risks for these soils?**

Sealing is the predominant risk for these soils, but they are also endangered by soil erosion, which is often caused by soil compaction and vehicle tracks.

### **Where these soils can be found ?**

Albic Luvisols can be widely found in Mecklenburg Western Pomerania, Schleswig-Holstein, Brandenburg, and can occur sporadically in Baden-Württemberg, Saxony-Anhalt, and Hessen where they are sometimes developed on loess.

### **Where you get more information?**

Landesamt für Umwelt, Naturschutz und Geologie Mecklenburg-Vorpommern, Herr Frank Idler:  
[frank.idler@lun.gv.de](mailto:frank.idler@lun.gv.de), [Tel:03843/7770](tel:03843/7770)

Landesamt f. Bergbau, Geologie und Rohstoffe Brandenburg,  
Dr. Dieter Kühn: [kuehn@lbgr.org](mailto:kuehn@lbgr.org), [Tel:033203/36690](tel:033203/36690)

Uni Tübingen, Institut f. Geographie, Dr. Peter Kühn  
[peter.kuehn@uni-tuebingen.de](mailto:peter.kuehn@uni-tuebingen.de)

**More material (Flyer, Poster, CD's) are available:** [frielinghaus@zalf.de](mailto:frielinghaus@zalf.de)