

Agronomy Profile



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Drainage Water Management

Overview

Water is a vital resource for agriculture, but excess water can disrupt farm operations, restrict plant root growth and increase erosion. Agricultural drainage removes excess water from the soil to enhance crop production.

What you should know

- In some soils, natural drainage is sufficient for crop growth, but in others, artificial drainage is needed.
- Plant roots need oxygen. When soil is saturated, plant roots survive short-term by using the oxygen in water. Prolonged wetness depletes the oxygen and roots die. Drainage makes room for air in the soil to replenish oxygen to roots.
- Improved drainage is important for timely field operations in the spring. Soil must be adequately dry before planting can take place. Improved drainage can allow access to fields days or weeks earlier.
- In poorly drained soil, early season root growth is restricted by a high water table. When the water table drops rapidly during the drier mid-season, further root growth is impaired. In drained soil, root systems develop more fully in the spring, giving plants access to deeper water during mid-summer dry periods.
- A symptom of poor drainage is yellowing of green vegetation. Yellowing can be caused by nitrogen deficiency from poor oxygen uptake by the roots. Yellow areas in a field can indicate where additional drainage might be needed.



Poor drainage can inhibit plant growth, especially root development.



30-Second Summary

- Agricultural drainage is an important crop management practice.
- Proper drainage improves growth and optimizes crop production.
- A combination of surface and subsurface drainage techniques can maximize drainage benefits.

NOTES:

<https://engineering.purdue.edu/SafeWater/Drainage/drainintro.htm>

For more information, contact:



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