Aeration
Nebraska Turfgrass Field Day 2023

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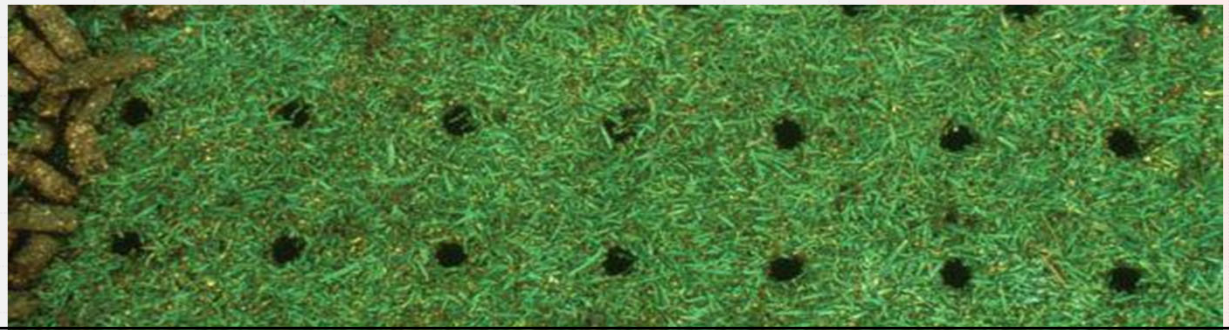
The following graphics were used/discussed in the field day presentation. Any questions please contact Roch at rgaussoin1@unl.edu

EXTENSION



1

To maintain optimal plant growth the entire volume of air to a depth of eight inches must be renewed every hour

2

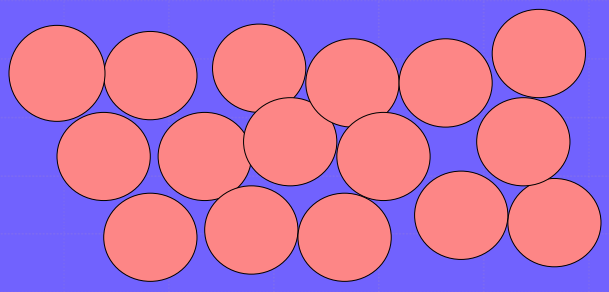
Soil Porosity

- Amount of air space (pores) in the soil normally expressed as a %
- Based on size and shape of soil particles
- Pore size
- Macropores
  - large
  - aeration, infiltration
- Micropores
  - small
  - water holding
  - nutrient holding

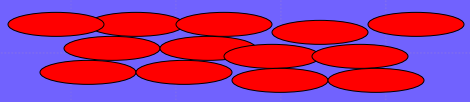
3

Soil Particle Shape

SAND



CLAY



4

Which soil has higher porosity?

a. **Sandy**
b. **Clayey**

5

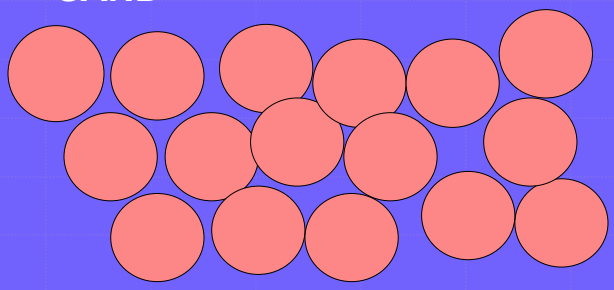
What weighs more ?

- A bucket of sand
- A bucket of clay

6

Soil Texture Effects on Porosity

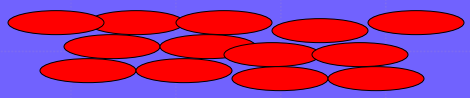
SAND



Macropores- low porosity

Air filled pores

CLAY



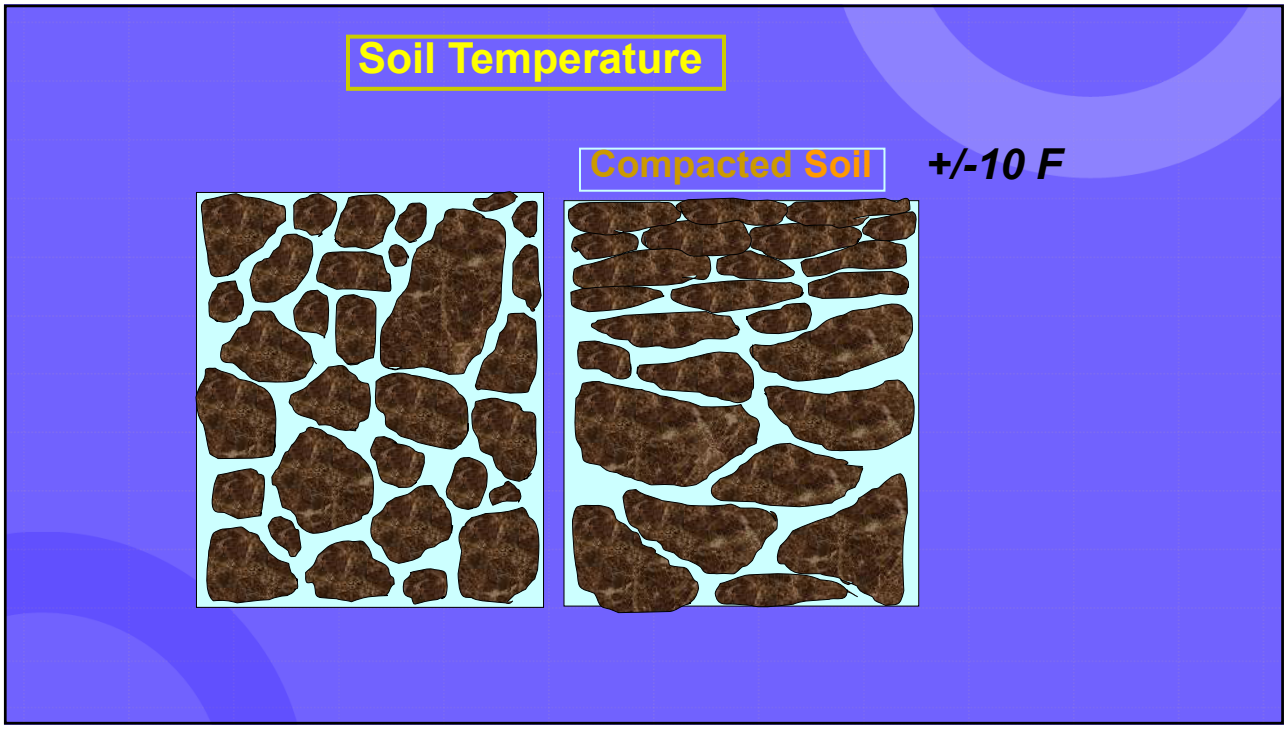
Micropores- high porosity

Water filled pores

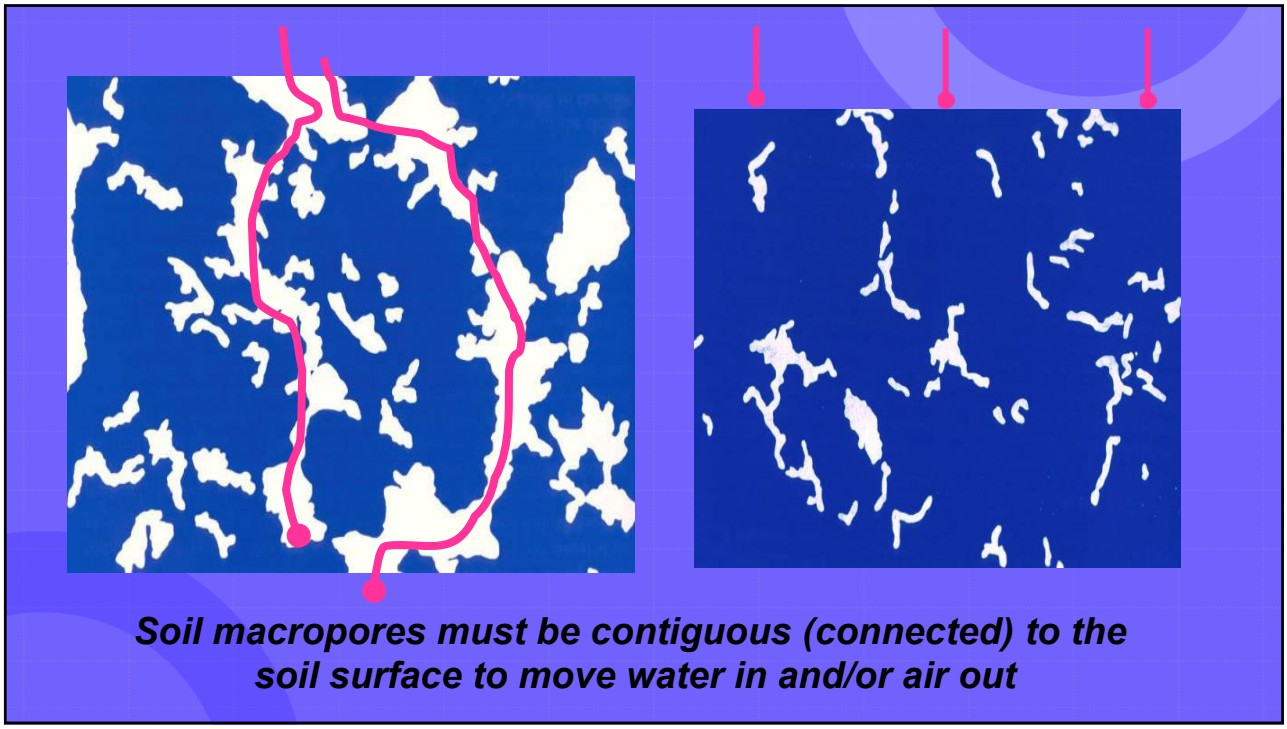
7

Compaction is the compression of soil particles resulting in loss of pore space in the soil profile resulting in a decrease in soil aeration.

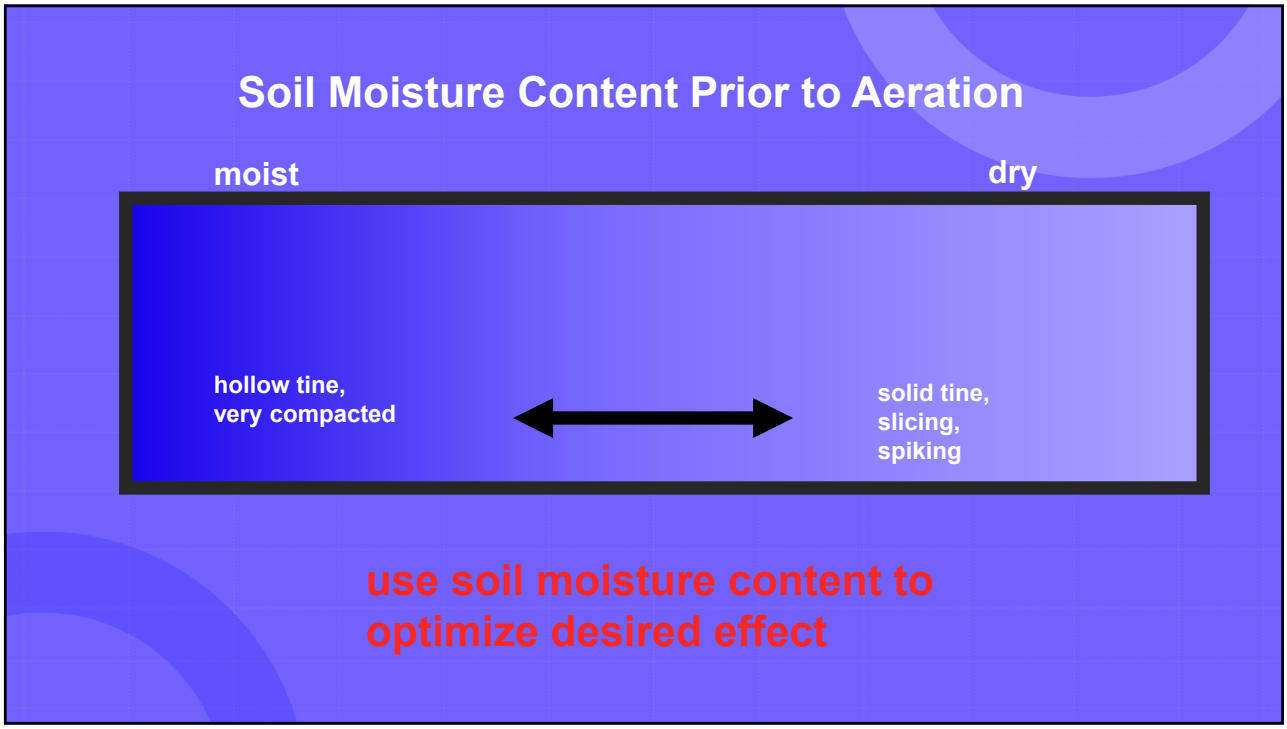
8


Soil Temperature
Compacted Soil
+/-10 F

9


Soil macropores must be contiguous (connected) to the soil surface to move water in and/or air out

10


Soil Moisture Content Prior to Aeration
moist
dry
hollow tine,
very compacted
solid tine,
slicing,
spiking
use soil moisture content to
optimize desired effect

11