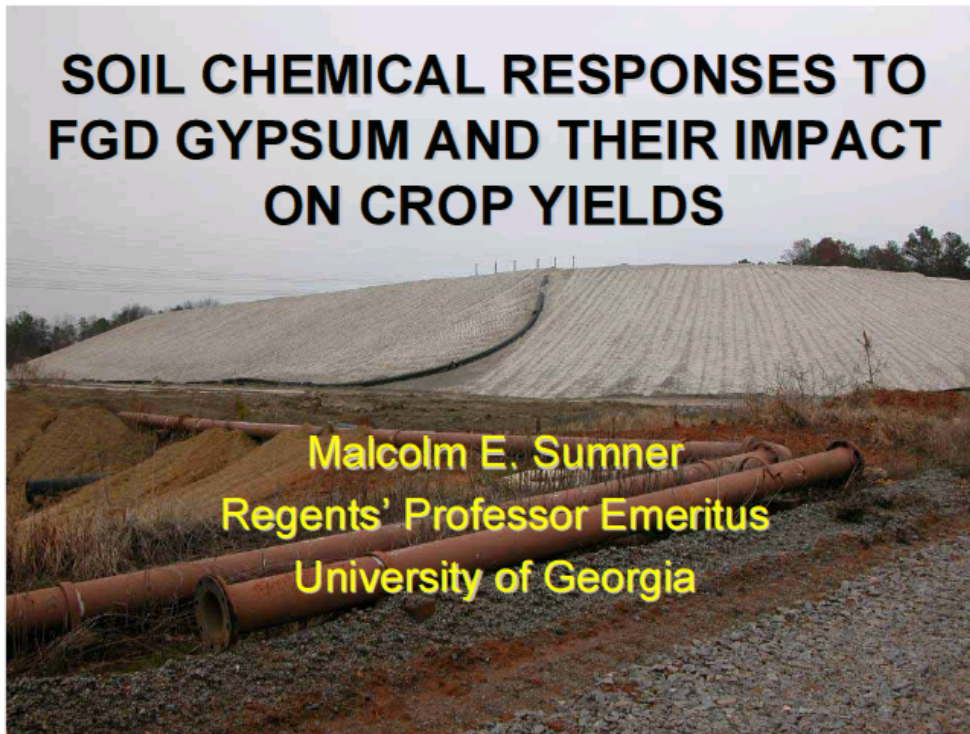
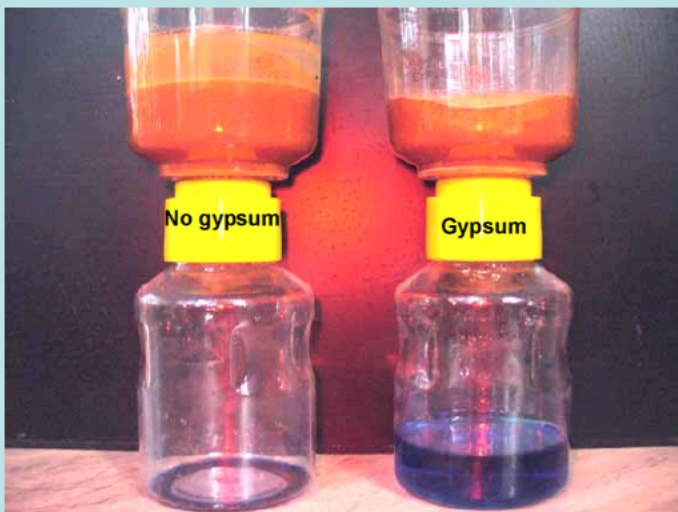


Dr. Malcolm Sumner presented the information below at the American Society of Agronomy meetings in Philadelphia, PA in November of 2009. These slides are just part of his presentation entitled "Soil Chemical Responses to Gypsum and Their Impact on Crop Yields".



GYPSUM IMPROVES PERCOLATION



In the picture to the left you can see the effects of water percolation in soil that has been treated with gypsum versus a soil that has not been treated with gypsum. The water ponds and does not run through where the soil has not been treated due to surface sealing. The

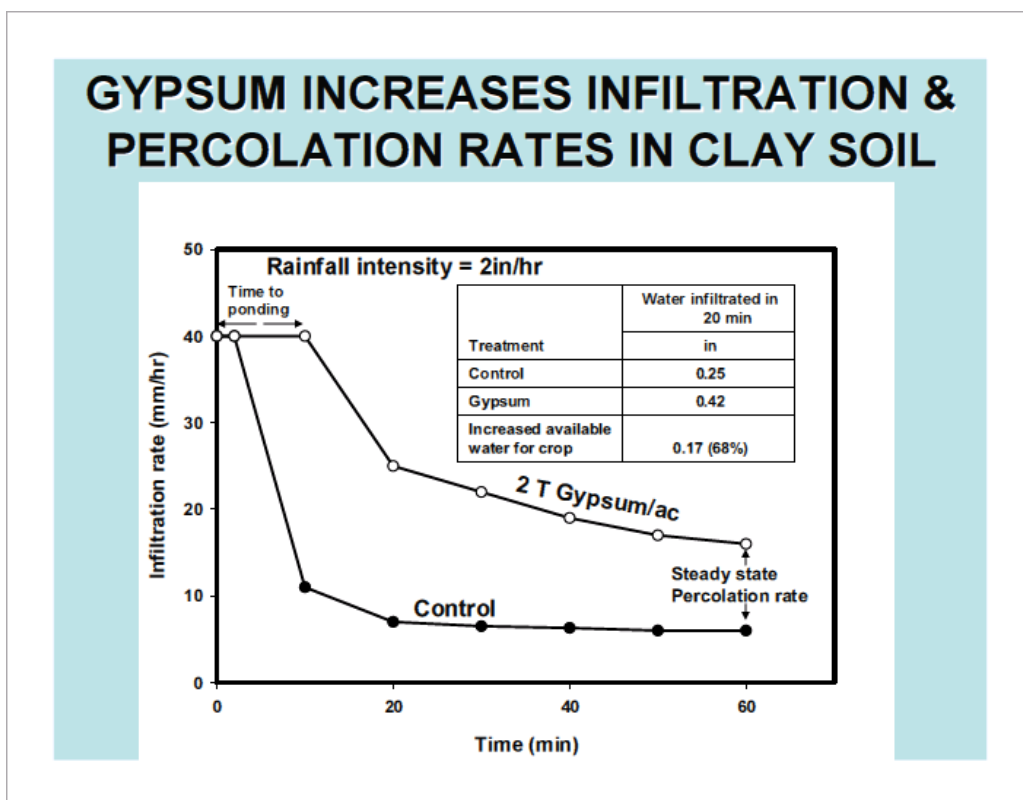
soil that has been treated has better soil aggregation and the water moves through the soil and collects in the jar below rather than ponding on the surface.

The data below in the table and graph shows the effects that gypsum has in increasing infiltration and percolation rates.

Notice with an application of 2 ton/acre of gypsum the time to ponding of the water was lengthened by at least five fold.

Also after 20 minutes of rain at an intensity of 2 inches per hour the infiltration rate was 2.5 times greater where the gypsum was applied and the amount of water available to the crop was increased 68%.

The steady state percolation (rate of water movement once soil has become saturated) was doubled where the gypsum was applied. This means less runoff, better water efficiency and less erosion on those fields with slopes.



In an irrigated field, this all means more water going into the soil for plant usage, less water running off of the field and likely less irrigation trips across the field. When you consider it costs at least \$7.50 for each acre inch of water, this can equate to huge cost savings, greater crop yields plus less nutrient runoff into streams and ditches.

In a separate research project under pivot irrigation with the University of Nebraska in 2008 where runoff and total phosphorus was measured (unpublished data) the runoff was decreased 11% with 2 tons per acre of gypsum and 54% with a 4 ton per acre rate of gypsum. The total phosphorus loss was decreased by 64% with a 4 ton per acre rate of gypsum.