**A Good Day to be an Agronomist**

Volcano, Central America  
Phosphorus mines Florida

Sechura rock phosphate, Peru

Renewable versus non-renewable  
N vs P  
N Cycle Haber-Bosch

How to increase P availability in a volcanic ash soil or an acid soil? Imogolite and/or allophane amorphous materials

Solubility diagram: supersaturation of the band with respect to CaSO4 (solubility is pH independent)

-🡪 intentionally precipitate P as DCPD or DCP, and prevent it from immediately becoming flouroapatite, variscite, strengite

Solution: Dual placement of P (DAP) with Gypsum  
or Rock phosphate (13.3%P)

18-46-0 N – P2O5 – K20

18 – 20 – 0 N-P-K (how do I make DAP) , starting with rock phosphate

Rock phosphate less soluble than DAP

How could I increase P solubility with rock phosphate? Band with N  
  
What about Banding DAP, Urea, and CaSO4?