The Department of Soil and Crop Sciences conducted a study to determine if rock phosphate (P), raw manure, composted manure, or vermicomposted manure was more likely to run off of an agricultural field as P pollution. The plant tissue P and yield differences were also measured to determine differences in bio-available P from the different organic P amendments. Rock phosphate provided no soil P concentration differences or yield improvements over the control after two growing seasons. Therefore, colloidal rock P was not effective in providing plant available P in high pH soils. Most cultivated soils in Colorado have a pH above 7.0. The raw, composted, and vermicomposted manure treatments all produced average or greater yields of cucumbers.

On alkaline soils it was best to use composted or vermicomposted manure, as opposed to raw manure, to minimize environmental impacts. However, raw manure also proved to be beneficial and supply an available P form. The runoff data illustrates that raw manure P was more likely to move from the plot via runoff than the composted and vermicomposted P.

For more information, contact Addy Elliott at Adriane.Elliott@Colostate.edu