# Reduction in acidity parameters 6 years after surface application of Ca-containing by-products. (S04-ritchey131322-Poster)

**Authors:**

- K.D.Ritchey* - *USDA-ARS, Beaver, WV*
- D.P.Belesky - *USDA-ARS, Beaver, WV*
- J.J.Halvorson - *USDA-ARS, Beaver, WV*
- J.D.Snuffer - *USDA-ARS, Beaver, WV*

## Abstract:

Mechanical incorporation of limestone in hill lands can lead to soil loss. An alternative is to surface-apply Ca sources that are more soluble such as coal combustion by-product (CCB) gypsum. Gypsum is known to improve grass yield on acid soil for several years after application, but longevity of the benefit is not well characterized. We surface-applied limestone and several CCB materials to an acid Appalachian site, measured grass hay production for 4 years, then overseeded with clover. Soil changes 6 years after application of 4.7 Mg/ha limestone were concentrated in the surface 2.5 cm. Soil improvements due to gypsum were less than those resulting from limestone addition. Regardless of treatment, clover-grass hay yield in the sixth year was positively correlated with increased soil pH, Ca, and Mg, and with decreased Al and Mn. Six years after application, CCB gypsum showed little benefit for grass-clover production apart from reduction in acidity due to a small (5%) calcium carbonate component.

**Corresponding Author Information:**

K. Dale Ritchey
USDA-ARS
1224 Airport Rd.
Beaver, WV 25813

phone: 304-256-2855
fax: 304-256-2921
e-mail: dritchey@afsrc.ars.usda.gov

## Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 2421

## Keywords:

dystrophic hay field, soil pH amendment, stratification of nutrients, leaching of nutrients