Gypsum has been used in agriculture for centuries. Traditionally, gypsum was mined material, but by-product gypsum sources, such as flue-gas desulfurization (FGD) gypsum, are readily available. Coal-burning electric power plants produce FGD gypsum during the scrubbing process to remove sulfur from the flue gas. Although FGD and mined gypsum are chemically the same, the particle size of FGD gypsum is typically smaller and thus reacts faster than mined gypsum. Agricultural soils can potentially benefit from the application of FGD gypsum since it can serve as a crop nutrient source, a soil amendment, and an inhibitor of nutrient and sediment movement to surface water. The scope of this community also includes other by-product gypsum and gypsum-like materials, such as wallboard gypsum and calcium sulfite from dry scrubbers.

Our Focus

By-product gypsum materials are a low-cost resource produced as a co-product of coal combustion and other industries that has beneficial uses in agriculture. FGD scrubbers to remove sulfur in coal-burning electric power plants improves air quality and yields by-product. Presently, FGD gypsum is used primarily by the wallboard and cement industries. However, installation of FGD scrubbers is expected to increase significantly in response to new and existing air pollution regulations, with a concomitant increase in FGD gypsum production. The current markets are not expected to be able to utilize all of the FGD gypsum produced. The beneficial uses of gypsum on agricultural land can provide an additional market for FGD gypsum, which would result in power plant operation.

Below: View of a FGD gypsum storage pile near an electric power plant. Inset: Broadcast FGD gypsum application to a farmer’s field.