The essentiality of S for plant growth has been recognized for approximately 140 yr. Sulfur is a macronutrient, although plants require much less of it than of N or K. The quantities of S required by most crops are comparable with requirements for P or Mg. Deficiencies of S were identified as early as 1900 in the northwestern USA and in 1927 on some soils in Alberta, Canada (Beaton, 1969).

Long before the essentiality of S for plant growth was confirmed, the practical value of applying gypsum was recognized. From 1790 to 1815, much gypsum was imported into the eastern states from mines near Paris (from which the phrase plaster of paris originated). The gypsum was used in conjunction with legumes to enhance the N status of soils (Craven, 1925).

Interest in S as a plant nutrient has increased in recent years. Such interest extends beyond increased crop yields. Food quality, especially low contents of essential S-containing amino acids, is a matter of serious concern in many technologically less-developed areas of the world (Evans et al., 1977). Widespread S deficiency has already been demonstrated in some of these areas (Bromfield, 1972, 1975).

Studies in West Africa suggest that S yields of crops (and thus yields of protein) are restricted by the quantity of S supplied in the rainwater (Bromfield, 1974; Fox et al., 1977). If pollution control measures are effective, atmospheric contributions of S will decrease with time. Thus, there are expectations that decreased atmospheric pollution will lead to even less sulfate (SO$_4^{2-}$) in rainwater, and this in turn will lead to more intense and expanded S deficiencies than have heretofore been recognized.