Since the 1940s, when soil testing became recognized as a reliable agronomic tool, millions of soil samples have been analyzed by soil testing laboratories in the USA. Today, approximately 3 million samples per year are analyzed by various laboratories around the nation. Many of these laboratories prepare summaries of soil test results. In a survey conducted in 1985 of the 50 states, 46 land grant university or government laboratories offered a soil testing service. Of these 46, 40 prepared summaries periodically, i.e., once every 1 to 10 years or so. Most of them, 25, produced summaries every year. These summaries are used to evaluate the fertility status of the soil to determine general fertilizer and lime needs. They are also used in farmer/homeowner educational programs to bring about desired changes in fertilizer and lime use.

VALUE AND RELIABILITY OF SOIL TEST SUMMARIES

Questions arise, from time to time, on the real value and reliability of soil test summaries to represent the true fertility status of the soil. Various factors have been reported (Harrison et al., 1983; McCollum & Nelson, 1954; Parker et al., 1951) that may bias soil test results upward or downward. These factors are discussed in the sections below.

Soil Samples Submitted by Better Farmers

Several workers have stated that most soil samples analyzed by soil testing laboratories have been submitted by better farmers. This would tend to bias test results upward and not give a true picture of the average fertility status of the soil. In the early 1950s, McCollum and Nelson (1954) conducted a study in Duplin County, North Carolina (Table 12-1), where about 1200 systematically collected samples were compared with over 500 farmer-collected samples that were tested by the North Carolina Department of Agriculture.