MAINTAINING FERTILITY LEVELS IN MASSACHUSETTS PASTURES

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The solution of the problem of fertility maintenance in Massachusetts pastures, the most important one relating to pasture culture in the state, has been the subject of much controversy in the past and still is a highly controversial subject. As more evidence accumulates regarding soils and soil fertility relationships, however, a much greater unanimity of opinion may be anticipated in the near future.

HISTORICAL BACKGROUND

The following historical data are supplied to show the development and the attempts at solution of the soil fertility problem in Massachusetts pastures.

The first pastures were the woods and intervales which had previously been the hunting grounds of the Indians. These areas produced scanty and poor quality feed and the problem was one of management and not one of soil fertility. These pastures received no greater care from the early settlers than they had from the Indians and this consisted of an annual burning over to keep down the growth of underbrush. For many years hoed crops were the principal objects of culture and the pasture crop was largely incidental.

Around 1750, however, an important change took place. The potentialities of grass as a crop appear to have been suddenly realized and seized upon. Between 1750 and 1790 large areas of land not well suited to tillage were cleared of timber and seeded to grass. By 1800 Timothy Dwight had enthusiastically written, “Grass is undoubtedly the most valuable object of culture in New England. Grass grows spontaneously even on the driest grounds and luxuriantly on others.” Livestock farming during the period expanded greatly. “Excellent neat cattle abound,” wrote Dwight, “... and beef is perhaps nowhere better fattened upon grass. Swine also abound here... Sheep are not very numerous... Horses abound in every part of New England.”

It is important to note from historical records that most of these permanent pasture lands were converted to grass within one to three years after the removal of the timber (3). Thus, a grass cover was established before the meager store of native fertility was lost either through crop removal, leaching, or surface erosion. The long productive life of permanent pastures is largely attributable to this fact. The native fertility was represented largely by a thick layer of forest organic matter and forest debris, frequently more than a foot in depth, which quickly underwent complete decomposition under continuous cultivation.

Most of these permanent pastures produced satisfactorily for 50 to 75 years and many of them much longer without any effort being made to maintain soil fertility. They were by far the most important type of pasture and they supplied most of the feeding. After this early period of grazing, many pastures began to fall off in productivity, and in certain parts of the state some showed evidence of serious deterioration. By 1840 such evidence was widespread. In 1841, Henry Colman (4), after a careful agricultural survey, reported, “... in general nothing is more disreputable to the large majority of farmers throughout the State, than the conditions of their pastures.” An Essex County farmer (10) in 1853 observed, “In many of our pastures it is now literally a struggle for life or death between the cow and the grass, from spring to autumn and often neither has vitality to exalt in a victory.”

EARLY ATTEMPTS TO RENOVATE PASTURES

Many agricultural leaders were aware of the serious condition of their pastures and also recognized the cause of their deterioration. In 1859, the pasture committee (6) for the State Board of Agriculture reported, “It is known to all who have investigated this subject, that all pastures which have been...