The Plant Pathology Disease Herbarium has nearly a thousand specimens of diseased plants collected primarily by plant pathologists from the Botany Department of the Massachusetts Agricultural College (subsequently the University of Massachusetts).

About fifty-five people are recorded as submitting one or more specimens to the collection; seventeen people worked at the University of Massachusetts. The oldest specimen is 'Kentucky Wonder' bean with Uromyces appendiculatusrust submitted by Professor Frederick A. McLaughlin in 1917, collected from Vineyard Haven, MA. McLaughlin graduated from Massachusetts Agricultural College in 1911; he taught Botany at the Massachusetts Agricultural College until 1930 and then took charge of the seed-testing laboratory until his retirement in 1954. Other faculty members contributing to the collection include Professor William H. Davis who joined the Botany Department in 1922 and worked on smuts of grasses and diseases of cabbage. His specimens date from 1919 to 1939. His first specimen was the smut fungus Ustilago longissima from Glyceria grandis; submitted from Marquette, Michigan in 1919. Professor Oran Boyd who joined the Botany Department in 1930 contributed many specimens from fruit trees, tobacco, vegetable crops and wheat. A well-known contributor was Professor Constantine "Connie" Gilgut. He worked at the Waltham Field Station from 1934-1942, and was a professor of nursery culture from 1942-1952. In 1952 Gilgut became a professor of plant pathology at UMass, Amherst. Gilgut also left a generous financial endowment to the Plant Biology Program, the "Constantine J. Gilgut Chair in Plant Biology". Perhaps the greatest contributor to the collection was Professor Walter Banfield who collected hundreds of specimens. Banfield joined the Department of Botany in 1949 and was best known for his research on Dutch elm disease. Banfield was also active in the Appalachian Mountain Club and established the Metacomet trail system in Massachusetts and Connecticut.

Of note is a single bacterial specimen from peach (Bacterium pruni) submitted by E. F. Smith, in 1923; presumably by Erwin F. Smith, the "father of bacterial plant pathology".