The peanut breeding program at N.C. State University released its first cultivar derived from hybridization and selection in 1952. Since 1944 when W.C. Gregory was hired, the program has been led by a series of trained plant breeders including D.A. Emery, J.C. Wynne, and for the past 20 years, T.G. Isleib. One of the measures of success of a breeding program is its rate of genetic gain, $\Delta G$, especially for yield. Since 1990, a database has been maintained of yield and grade means for lines entered in trials in North Carolina as part of the in-state testing program (the “N.C. database”). A similar database has been maintained for line means in the individual tests conducted as part of the Peanut Variety and Quality Evaluation (PVQE) program, the official variety test for the Virginia-Carolina production region (the “PVQE database”). These databases provide the information necessary to estimate genetic gain. In the N.C. database, yields were analyzed for all lines that were retained for testing in three or more years; in the PVQE database for two or more years. Because lines are generally tested at least two years in the N.C program before “graduating” to the PVQE program, these subsets both contain similar arrays of lines although the N.C subset includes more and more recent lines while the PVQE subset includes only those lines considered productive enough to advance to the regional testing program. Effects of years and locations were removed, and mean yields for lines were adjusted to a common environmental level. The first year of evaluation of each line was identified, and the adjusted means were used as dependent variables in a regression against first year of testing. Separate regressions were performed for lines released as cultivars and those still considered experimental. Using the N.C database, the gain for cultivars was curvilinear, characterized by a quadratic equation that was relatively flat in the period represented by NC 7 through Perry then increased at approximately the same rate as the experimental lines which showed a linear response increase in yield over time, $Y = 40.03X - 76461$ ($r = 0.54$, $P<0.05$), i.e., yield increased by 40 lb/A yr. Genetic gain was less when only the elite lines tested in the PVQE program were considered: $Y = 27.072X - 49820$ ($r = 0.59$, $P<0.05$). The relative lack of $\Delta G$ observed for the period represented by NC 7 (first year of testing 1974) through Perry (first year of testing 1993) may reflect the occurrence of new diseases during the time frame of data collection, 1990-2009. Old cultivars that were selected and released prior to the advent of Tomato spotted wilt and Sclerotinia blight across the VC region would be unlikely to perform well in trials conducted from the mid-1990s on.