Leaf spots (LS) caused by *Cercospora arachidicola* Hori (early leaf spot or ELS) and *Cercosporidium personatum* (Berk. & M.A. Curtis) Deighton (late leaf spot or LLS) are major foliar diseases of peanut (*Arachis hypogaea* L.) which if untreated can lead to major yield loss due to heavy defoliation as well as the abscission of pegs. The existence of affordable chemical control and the lack of high levels of genetic resistance within *A. hypogaea* have limited success in breeding for leaf spot resistance. Nevertheless, breeding effort for LS resistance has been ongoing since the initiation of the peanut breeding program in the 1940s, and although none of the cultivars released since then has been completely resistant to either LS, we have been able to lower the levels of defoliation from infection considerably within our populations by proper selection of parents in our crossing programs. We have evaluated our cultivars at the Peanut Belt Research Station for over five years with and without chemical control for LS to demonstrate the progress towards breeding for resistance. For resistant checks we used several lines, among which were GP-NC 343, PI 121067, and PI 269685. PI 121067 and PI 269685 had the lowest defoliation scores (2.81±0.23 and 2.62±0.23, respectively) where a score of 1 indicates no defoliation and 9 complete defoliation. The partially resistant lines still yielded in excess of 3100 lb/A. The greatest average yield was obtained with GP-NC 343 with a defoliation score of 4.22±12 and yield of 3931±145 kg/ha (3504±129 lb/A). Among the cultivars without leaf spot control, NC-V 11, released in 1989, had a defoliation score of 6.19±0.13 (susceptible) and yielded 3004±148 kg/ha (2678±132 lb/A). Among the cultivars released from 1999-2009, Gregory, Perry and Phillips had lesser mean defoliation scores of about 5.8 than did Brantley, which had an average defoliation score of 6.0 with an average yield of about 2900 kg/ha (2600 lb/A). Our recent release, Bailey, showed a significantly lower defoliation score of 4.89±0.14 and yielded 4208±159 kg/ha (3751±142 lb/A). Among the cultivars, it was found that the average loss in yield per unit of defoliation was found to be approximately 758.2 kg/ha (675.9 lb/A) per unit of defoliation score or about 60.7 kg/ha (54.1 lb/A) lost per percent of defoliation in a field.