

Selection for Two Seeded Pods in Consecutive Generations of the Wild Species *Arachis Monticola* Krapov. & Rigoni

C.E. SIMPSON*, Texas A&M AgriLife Research. Stephenville, TX 76401.

Many of the *Arachis* section species of the genus *Arachis* will develop approximately 0.1 to 0.5% of pods that have little or no isthmus between the two pod segments. Establishment of the fact that *A. hypogaea* L. most likely developed from the other tetraploid in section *Arachis*, *A. monticola*, a study has been initiated to evaluate the progression of development of two seeded pods in *A. monticola*. This tetraploid wild species has been in the US collection for many years, but Dr. Walton C. Gregory told me in 1973, when I started working with him, that the *A. monticola* in his, and all of the US collection was badly introgressed with *A. hypogaea*, and that we needed to return to the *Type Local* to recollect pure *A. monticola*. This process was completed in 1967 when the collection team of Krapovickas, Gregory, Banks, Pietrarelli, Schinini and Simpson collected KGBPScS-30062 at Yala, Jujuy, ARG and KGBPScS-30063 at Lozano, Jujuy, ARG. Bringing those two collections to the USA was an important event in our collection efforts. As these two accessions were increased for distribution it was noted that 30062 had an occasional two segmented pod with no isthmus, whereas no "doubles" have been observed in the 30063 collection. This latter collection was located 6 Km upstream of the Rio Grande from 30062. As time advanced I became more interested in tracking this phenomenon, and then, in 1982 Schinini et al. collected *A. monticola*, 3 and 5 Km farther down-stream of Rio Grande that flows past Lozano and Yala. In the first seed increase I noted that ScVn-21769 had several pod segments without the isthmus. One can only guess how many generations were passed from the origin of *A. monticola* at Lozano, or elsewhere, to the progression downstream at Yala and then 3 Km farther (ScVn-21769) and 5 Km (ScVn 21768) even farther downstream. If these generations were guided by man selecting for what he/she realized was better, i.e., 2 seeded pods, then, how long did it take to have virtually all pod segments on a plant to be double seeded; *A. hypogaea*? Having now made the actual cross that, in all probability, formed *monticola* and *hypogaea*, I have decided to see how long it would take to derive all two seeded pods from *A. monticola* by putting selection pressure on the process. After 6 generations the process appears to be moving quite rapidly. Selection generation 1= 24% doubles; 2= 22%; 3=32%; 4=35%; 5=40%; and 6=58%. The check was generated by selecting at random from the single seeded pods. Consecutive percent of doubles from the checks was: 1=24%; 2=25%; 3=31%; 4=30%; 5=24% and 6=24%. The study is continuing, with generation 7 growing now.