



Figure S3. Reconstructed versus extant progenitor midpoints in tube length and width for (a) *N. tabacum*, (b) *N. rustica*, (c) *N. arentsii*, and (d) section *Polydicliae*. Convex polygons include the flower averages of each accession; diploids have solid lines, allotetraploids have dashed lines, and homoploids have dotted lines. Reconstructed progenitors are marked with dotted circles and the reconstructed progenitor midpoint is a square with a dotted black outline. Colored lines connect progenitor midpoints with allopolyploid means (solid=extant; dashed=reconstituted). Lines only drawn for extant midpoint for synthetic polyploids. If reconstructed phenotype similar to extant, only one set of lines is present (c). Abbreviations are as follows: *sylv*=*N. sylvestris*; *tab* 095-55=*N. tabacum* 095-55; *tab* 51789=*N. tabacum* 51789; *tab* 'Chulu'=*N. tabacum* 'Chulumani'; *tab* SR1=*N. tabacum* SR1; *syn tab* QM=synthetic *N. tabacum* QM; *syn tab* TH37=synthetic *N. tabacum* TH37; *tomtform*=*N. tomentosiformis*; *pani*=*N. paniculata*; *rust asi*=*N. rustica* var. *asiatica*; *rust pav*=*N. rustica* var. *pavonii*; *syn UxP*=synthetic UxP; *syn F₁*=synthetic PUE1 F₁; *syn rust S₀*=synthetic *N. rustica* PUE1-R10 S₀; *syn rust S₁*=synthetic *N. rustica* PUE1-R1 S₁; *undu*=*N. undulata*; *aren*=*N. arentsii*; *wigan*=*N. wigandioides*; *obtus*=*N. obtusifolia*; *clev*=*N. clevelandii*; *quad* 9047=*N. quadrivalvis* 904750042; *quad* TW18=*N. quadrivalvis* TW18; *x obtus* 1=*N. x obtusiata* line 1; *x obtus* 2=*N. x obtusiata* line 2; *x obtus* 5=*N. x obtusiata* line 5; *atten*=*N. attenuata*.