

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: Summary of studies on HHS and introgression (from 2012 to 2021) based on population genomic data.

File Name: Supplementary Data 2

Description: . Individuals sampled in this study and their locations.

File Name: Supplementary Data 3

Description: Assessment of different reference genomes using randomly selected samples.

File Name: Supplementary Data 4

Description: Genome-resequencing statistics for the individuals sampled in this study.

File Name: Supplementary Data 5

Description: PSGs identified in sect. *Distegocarpus* derived from sect. *Carpinus*.

File Name: Supplementary Data 6

Description: PSGs identified in sect. *Distegocarpus* derived from *Ostrya*.

File Name: Supplementary Data 7

Description: Genes identified as harboring hybrid signals.