

S3 Table. Factor loadings of display size and floral scent compounds of *Gymnadenia odoratissima* plants on principal components (PCs) using the two-year data set.

| Trait | PC1 | PC2 | PC3 | PC4 | PC5 | PC6 | PC7 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Display size | | | | | | | |
| Plant height | 0.097 | -0.004 | 0.857 | 0.003 | -0.009 | -0.095 | 0.035 |
| Inflorescence length | 0.049 | -0.020 | 0.881 | 0.038 | 0.044 | -0.054 | 0.028 |
| Number of flowers | 0.067 | -0.014 | 0.822 | 0.085 | 0.025 | 0.014 | -0.030 |
| Floral scent | | | | | | | |
| Aromatics | | | | | | | |
| Styrene | 0.105 | 0.445 | -0.079 | -0.091 | 0.447 | 0.010 | 0.184 |
| Benzaldehyde | 0.874 | 0.110 | 0.067 | 0.289 | 0.089 | 0.033 | -0.020 |
| Benzyl alcohol | 0.336 | 0.032 | 0.045 | 0.845 | 0.157 | 0.021 | 0.057 |
| Phenylacetaldehyde | 0.828 | 0.054 | 0.061 | 0.222 | 0.005 | 0.026 | -0.065 |
| Phenylethyl alcohol | 0.363 | 0.039 | 0.061 | 0.833 | 0.085 | 0.048 | 0.005 |
| Benzyl acetate | 0.903 | 0.062 | 0.096 | -0.032 | 0.076 | 0.055 | 0.061 |
| 1-Phenyl-1,2-propanedione | 0.782 | 0.102 | 0.001 | 0.237 | 0.148 | 0.072 | 0.038 |
| Phenylethylacetate | 0.858 | 0.060 | 0.118 | -0.015 | 0.089 | 0.057 | 0.041 |
| 1-Phenyl-2,3-butanedione | 0.851 | 0.068 | -0.016 | 0.162 | -0.003 | 0.014 | -0.006 |
| Eugenol | 0.566 | 0.088 | 0.055 | 0.442 | 0.093 | 0.033 | 0.294 |
| Methyl eugenol | 0.056 | 0.013 | 0.045 | 0.052 | 0.036 | 0.017 | 0.880 |
| Benzyl benzoate | 0.007 | 0.064 | -0.015 | 0.033 | 0.053 | -0.027 | 0.871 |
| Terpenoids | | | | | | | |
| α -Pinene | 0.254 | 0.639 | 0.085 | -0.036 | 0.108 | 0.025 | -0.027 |
| Sabinene | 0.026 | 0.787 | -0.054 | 0.049 | 0.080 | 0.068 | 0.042 |
| β -Pinene | 0.041 | 0.904 | -0.037 | 0.021 | 0.110 | 0.008 | 0.013 |
| 6-Methyl-5-hepten-2-one | 0.103 | 0.141 | 0.063 | 0.164 | 0.824 | 0.101 | -0.035 |
| Limonene | 0.025 | 0.795 | 0.010 | 0.126 | 0.067 | 0.057 | 0.021 |
| Geranyl acetone | 0.079 | 0.100 | -0.025 | 0.075 | 0.858 | 0.008 | 0.059 |
| Fatty acid derivatives | | | | | | | |
| (Z)-3-Hexen-1-ol | -0.017 | -0.006 | -0.108 | 0.076 | 0.047 | 0.890 | -0.002 |
| Heptanal | 0.111 | 0.274 | 0.244 | 0.358 | 0.430 | 0.151 | 0.061 |
| (Z)-3-Hexenyl acetate | 0.064 | 0.084 | -0.128 | 0.042 | -0.013 | 0.899 | -0.031 |
| Hexyl acetate | 0.249 | 0.129 | 0.217 | -0.055 | 0.253 | 0.472 | 0.041 |

Note: For each trait, the highest loading is highlighted in bold. The PCs were extracted from a principal component analysis, which was conducted on traits standardized per population to 0 ± 1 (mean \pm SD) using varimax rotation. The seven PCs with an eigenvalue > 1 explained 71.8% of the total variance. PC1 explained 21.8% of the total variance, PC2 11.6%, PC3 10.0%, PC4 9.1%, PC5 7.2%, PC6 6.5%, and PC7 5.7%.