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| --- | --- | --- | --- | --- | --- |
| **Table S1. List of species used in the study**. Flower colour based on human vision model, main flower pigments and source of pigment composition and flower reflectance spectra is specified. FReD, Floral Reflectance Database (www.reflectance.co.uk). | | | | | |
| **Family** | **Species** | **Flower color** | **Pigment group** | **Pigment reference** | **Reflectance data** |
| Amaryllidaceae | *Allium schoenoprasum* | Pink | Cyanidin | This study | FReD (ID 1197) |
| Amaryllidaceae | *Allium triquetrum* | White | UV-absorbing | This study | This study |
| Amaryllidaceae | *Narcissus cavanillesii* | Yellow | Carotenoids | This study | This study |
| Amaryllidaceae | *Narcissus serotinus* | White | UV-absorbing | This study | This study |
| Apiaceae | *Daucus carota* | White | UV-absorbing | This study | This study |
| Asteraceae | *Andryala integrifolia* | Yellow | Aurones-chalcones | This study | This study |
| Asteraceae | *Calendula arvensis* | Yellow | Carotenoids | This study | This study |
| Asteraceae | *Centaurea montana* | Blue | Cyanidin | Robinson et al. 1934 | FReD (ID 3708) |
| Asteraceae | *Centaurea nigrescens* | Pink | Cyanidin | Robinson et al. 1931 | FReD (ID 1706) |
| Asteraceae | *Chrysanthemum segetum* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 3986) |
| Asteraceae | *Cichorium intybus* | Blue | Delphinidin | Robinson et al. 1931 | This study |
| Asteraceae | *Cirsium palustre* | Purple | Cyanidin | Robinson et al. 1931 | FReD (ID 1289) |
| Asteraceae | *Coreopsis lanceolata* | Yellow | Aurones-chalcones | Boucherle et al. 2017 | FReD (ID 3544) |
| Asteraceae | *Crepis vesicaria* | Yellow | Carotenoids | This study | This study |
| Asteraceae | *Dittrichia viscosa* | Yellow | Carotenoids | This study | This study |
| Asteraceae | *Sinapsis arvensis* | Yellow | Carotenoids | Camara et al. 1995; this study | FReD (ID 1604) |
| Asteraceae | *Sonchus olearaceus* | Yellow | Carotenoids | Camara et al. 1995; this study | FReD (ID 3387) |
| Asteraceae | *Taraxacum campylodes* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 1255) |
| Asteraceae | *Tolpis barbata* | Yellow | Aurones-chalcones | This study | This study |
| Asteraceae | *Tussilago farfara* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 3291) |
| Bignoniaceae | *Jacaranda puberula* | Violet | Delphinidin | Robinson et al. 1932 | FReD (ID 2449) |
| Boraginaceae | *Anchusa azurea* | Blue | Delphinidin | Robinson et al. 1931 | FReD (ID 3634) |
| Boraginaceae | *Borago officinalis* | Blue | Delphinidin | Salem et al. 2014; this study | FReD (ID 4236) |
| Boraginaceae | *Echium vulgare* | Violet | Delphinidin | Beale et al. 1941 | FReD (ID 1190) |
| Boraginaceae | *Myosotis sylvatica* | Blue | Delphinidin | Lawrence et al. 1938 | FReD (ID 3328) |
| Boraginaceae | *Symphytum officinale* | Violet | Pelargonidin | Lawrence et al. 1938 | FReD (ID 2123) |
| Brassicaceae | *Brassica nigra* | Yellow | Carotenoids | This study | This study |
| Brassicaceae | *Diplotaxis virgata* | Yellow | Carotenoids | This study | This study |
| Brassicaceae | *Sisymbrium austriacum* | Yellow | Carotenoids | This study | This study |
| Campanulaceae | *Campanula glomerata* | Violet | Delphinidin | Robinson et al. 1931 | FReD (ID 3348) |
| Campanulaceae | *Campanula medium* | Pink | Pelargonidin | Robinson et al. 1931; Iwashina 2015 | FReD (ID 3199) |
| Campanulaceae | *Campanula persicifolia* | Blue | Delphinidin | Lawrence et al. 1938 | FReD (ID 2050) |
| Caprifoliaceae | *Lonicera alpigena* | Red | Cyanidin | Robinson et al. 1993 | FReD (ID 3213) |
| Caprifoliaceae | *Valeriana officinalis* | Pink | Cyanidin | Lawrence et al. 1938 | FReD (ID 1788) |
| Caryophyllaceae | *Silene dioica* | Pink | Cyanidin | Kamsteeg et al. 1979 | FReD (ID 2154) |
| Caryophyllaceae | *Silene latifolia* | White | UV-absorbing | This study | This study |
| Caryophyllaceae | *Silene littorea* | Pink | Cyanidin | Del Valle et al. 2019 | FReD (ID 4230) |
| Caryophyllaceae | *Viscaria vulgaris* | Pink | Cyanidin | Robinson et al. 1932 | FReD (ID 3220) |
| Convolvulaceae | *Convolvulus althaeoides* | Pink | Cyanidin | Cabrita et al. 2015 | FReD (ID 2639) |
| Cynomoriaceae | *Cynomorium coccineum* | Red | Cyanidin | Harborne et al. 1994 | This study |
| Drosophyllaceae | *Drosophyllum lusitanicum* | Yellow | Aurones-chalcones | This study | This study |
| Ericaceae | *Erica herbacea* | Pink | Cyanidin | Crowden and Jarman 1976 | FReD (ID 3135) |
| Euphorbiaceae | *Euphorbia helioscopia* | Green | Chlorophylls | This study | This study |
| Euphorbiaceae | *Euphorbia peplus* | Green | Chlorophylls | This study | This study |
| Fabaceae | *Astragalus hamosus* | White | UV-absorbing | This study | This study |
| Fabaceae | *Cytisus grandiflorus* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Cytisus oromediterraneus* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Genista cinerea* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Genista hirsuta* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Genista triacanthos* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Lathyrus vernus* | Purple | Malvidin | Pecket 1960 | FReD (ID 1491) |
| Fabaceae | *Lotus creticus* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Lupinus polyphyllus* | Blue | Cyanidin | Robinson et al. 1934 | FReD (ID 676) |
| Fabaceae | *Retama monosperma* | White | UV-absorbing | This study | This study |
| Fabaceae | *Spartium junceum* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 4012) |
| Fabaceae | *Trifolium pratense* | Purple | Cyanidin | Lawrence et al. 1938 | FReD (ID 1654) |
| Fabaceae | *Trifolium repens* | White | UV-absorbing | This study | FReD (ID 2716) |
| Fabaceae | *Ulex parviflorus* | Yellow | Carotenoids | This study | This study |
| Fabaceae | *Vicia cracca* | Purple | Delphinidin | Robinson et al. 1931 | FReD (ID 1386) |
| Gentianaceae | *Gentiana acaulis* | Violet | Delphinidin | Robinson et al. 1932 | FReD (ID 3145) |
| Gentianaceae | *Gentiana verna* | Purple | Delphinidin | Beale et al. 1941 | FReD (ID 3133) |
| Gentianaceae | *Gentianella campestris* | Pink | Delphinidin | Robinson et al. 1934 | FReD (ID 2060) |
| Geraniaceae | *Geranium phaeum* | Pink | Delphinidin | Robinson et al. 1934 | FReD (ID 3167) |
| Geraniaceae | *Geranium pratense* | Violet | Malvidin | Robinson et al. 1931 | FReD (ID 1730) |
| Geraniaceae | *Geranium robertianum* | Pink | Malvidin | Robinson et al. 1931 | FReD (ID 1587) |
| Iridaceae | *Crocus vernus* | Violet | Delphinidin | Robinson et al. 1932 | FReD (ID 2516) |
| Lamiaceae | *Ajuga reptans* | Purple | Delphinidin | Robinson et al. 1932 | FReD (ID 2110) |
| Lamiaceae | *Lamium galeobdolon* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 2395) |
| Lamiaceae | *Lamium maculatum* | Violet | Cyanidin | Saito and Harborne 1992 | FReD (ID 2561) |
| Lamiaceae | *Origanum vulgare* | Pink | Malvidin | Robinson et al. 1931 | FReD (ID 3610) |
| Lamiaceae | *Phlomis lychnitis* | Yellow | Carotenoids | This study | This study |
| Lamiaceae | *Prunella grandiflora* | Blue | Delphinidin | Lawrence et al. 1938 | FReD (ID 1870) |
| Lamiaceae | *Salvia pratensis* | Purple | Malvidin | Robinson et al. 1931 | FReD (ID 1602) |
| Lamiaceae | *Salvia rosmarinus* | Blue | Delphinidin | Robinson et al. 1932 | This study |
| Lamiaceae | *Stachys sylvatica* | Pink | Cyanidin | Robinson et al. 1931 | FReD (ID 1777) |
| Lamiaceae | *Thymus serpyllum* | Violet | Cyanidin | Lawrence et al. 1938 | FReD (ID 3281) |
| Liliaceae | *Lilium martagon* | Pink | Cyanidin | Robinson et al. 1931 | FReD (ID 2071) |
| Lythraceae | *Lythrum salicaria* | Pink | Malvidin | Robinson et al. 1931 | FReD (ID 2509) |
| Malvaceae | *Malva sylvestris* | Pink | Malvidin | Lawrence et al. 1938 | FReD (ID 4235) |
| Myrtaceae | *Myrtus communis* | White | UV-absorbing | This study | This study |
| Onagraceae | *Chamerion angustifolium* | Pink | Malvidin | Robinson et al. 1931 | FReD (ID 1245) |
| Onagraceae | *Epilobium angustifolium* | Violet | Malvidin | Lawrence et al. 1938 | FReD (ID 1395) |
| Orchidaceae | *Ophrys lutea* | Green | Chlorophylls | This study | This study |
| Orchidaceae | *Orchis italica* | Red-pink | Cyanidin | Uphoof 1979 | FReD (ID 2885) |
| Orchidaceae | *Phalaenopsis schilleriana* | Pink | Cyanidin | This study | FReD (ID 1531) |
| Orobanchaceae | *Melampyrum nemerosum* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 1405) |
| Orobanchaceae | *Parentucellia viscosa* | Yellow | Carotenoids | This study | This study |
| Oxalidaceae | *Oxalis pes-caprae* | Yellow | Aurones-chalcones | Boucherle et al. 2017; this study | FReD (ID 3978) |
| Papaveraceae | *Papaver rhoeas* | Red | Pelargonidin | Lawrence et al. 1938; Dudek et al. 2020 | FReD (ID 2125) |
| Papaveraceae | *Papaver somniferum* | Red | Pelargonidin | Lawrence et al. 1938 | FReD (ID 2113) |
| Plantaginaceae | *Antirrhinum majus* | Pink | Pelargonidin | Jorgensen and Geissman 1955 | FReD (ID 2676) |
| Plantaginaceae | *Linaria alpina* | Violet | Delphinidin | Beale et al. 1941 | FReD (ID 3210) |
| Plantaginaceae | *Linaria spartea* | Yellow | Aurones-chalcones | Valdés 1970; this study | This study |
| Plantaginaceae | *Linaria viscosa* | Yellow | Aurones-chalcones | Valdés 1970; this study | This study |
| Plantaginaceae | *Penstemon barbatus* | Red | Pelargonidin | Wessinger et al. 2014 | FReD (ID 2468) |
| Plantaginaceae | *Veronica chamaedrys* | Blue | Delphinidin | Robinson et al. 1932 | FReD (ID 3513) |
| Plantaginaceae | *Veronica spicata* | Blue | Delphinidin | Beale et al. 1941 | FReD (ID 1436) |
| Primulaceae | *Cyclamen persicum* | Pink | Malvidin | Lawrence et al. 1938 | FReD (ID 2960) |
| Primulaceae | *Lysimachia arvensis* (blue) | Blue | Malvidin | Sanchez-Cabrera et al. 2021 | FReD (ID 2655) |
| Primulaceae | *Lysimachia arvensis* (orange) | Orange | Pelargonidin | Sanchez-Cabrera et al. 2021 | FReD (ID 4023) |
| Primulaceae | *Primula farinosa* | Pink | Malvidin | Beale et al. 1941 | FReD (ID 1960) |
| Primulaceae | *Soldanella alpina* | Violet | Delphinidin | Beale et al. 1941 | FReD (ID 1357) |
| Ranunculaceae | *Aconitum napellus* | Blue | Delphinidin | Robinson et al. 1931 | FReD (ID 1684) |
| Ranunculaceae | *Caltha palustris* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 1620) |
| Ranunculaceae | *Helleborus foetidus* | Green | Chlorophylls | This study | This study |
| Ranunculaceae | *Ranunculus acris* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 1408) |
| Ranunculaceae | *Ranunculus arvensis* | Yellow | Carotenoids | This study | This study |
| Ranunculaceae | *Ranunculus bullatus* | Yellow | Carotenoids | This study | This study |
| Ranunculaceae | *Ranunculus repens* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 3338) |
| Rhamnaceae | *Rhamnus lycioides* | Green | Chlorophylls | This study | This study |
| Rosaceae | *Crataegus monogyna* | White | UV-absorbing | This study | This study |
| Rutaceae | *Ruta angustifolia* | Yellow | Carotenoids | This study | This study |
| Santalaceae | *Osyris lanceolata* | Green | Chlorophylls | This study | This study |
| Saxifragaceae | *Chrysosplenium alternifolium* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 3137) |
| Saxifragaceae | *Saxifraga oppositifolia* | Pink | Malvidin | Beale et al. 1941 | FReD (ID 2040) |
| Scrophulariaceae | *Verbascum sinuatum* | Yellow | Carotenoids | This study | This study |
| Solanaceae | *Cestrum x newellii* | Red | Pelargonidin | Lawrence et al. 1938 | FReD (ID 4245) |
| Solanaceae | *Solanum dulcamara* | Violet | Delphinidin | Robinson et al. 1931 | FReD (ID 1226) |
| Thymelaeaceae | *Daphne cneorum* | Pink | Cyanidin | Robinson et al. 1932 | FReD (ID 3150) |
| Thymelaeaceae | *Daphne laureola* | Green | Chlorophylls | This study | This study |
| Thymelaeaceae | *Daphne mezereum* | Violet | Cyanidin | Beale et al. 1941 | FReD (ID 2364) |
| Violaceae | *Viola tricolor* | Violet | Delphinidin | Hayashi and Takeda 1962 | FReD (ID 3302) |
| Xanthorrhoeaceae | *Hemerocallis lilioasphodelus* | Yellow | Carotenoids | Camara et al. 1995 | FReD (ID 2703) |

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