**Appendix 1 A.**

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**Appendix 1 B.**

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**Appendix I.**

The average percentage of correct choices of the random rewarding arm (one of six in the radial maze in which the 12 tested flower types were presented) as a function of the distance by *Bombus terrestris* workers; the correspondent binomial probability (P value) that the number of correct choices were higher than 20% of the total number of trials (range 5-9, average=7); and the number of bees tested for each flower type in each distance for all studied flower types: *Allium*=*Allium cristophii* (n=5 bees); *Argyanthemum*=manipulated  *Argyanthemum frutescens* with 10 petals (n=7); *Aubrieta=Aubrieta deltoidea*; *Bellis*= *Bellis perennis* with reduced diameter (n=7 bees); *Bellis*16= *Bellis perennis* with reduced 16 petals (n=7 bees); *Bellis*8= *Bellis perennis* with reduced 8 petals (n=5 bees); *Cotoneaster= Cotoneaster microphyllus* (n=9 bees); *Escallonia= Escallonia macrantha* (n=6 bees); *Ranunculus=Ranunculus bulbosus* (n=5 bees); *Solanum* star*=Solanum crispum* with reduced area (n=5 bees); *Spartium* enface=*Spartium junceum* presented en face (n=5); *Spartium* profile=*Spartium junceum* presented in profile (n=5 bees). Manipulated flowers have reduced number of petals as indicated by the number following their name. The visual parameters of the flower types are presented in Table 1.

**Appendix II.**

Maximal detection distance (MDD) of all tested individual bees (each line presents a single bee) to all tested flowers; flower (coloured) area, average diameter and the contour line (Perimeter) of all tested flowers and the value of the green-receptor contrast between petal colour and the green background of the radial maze against which the flowers were presented to the bees. See also Table 2.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Flower | MDD mm | Area cm2 | Diameter mm | Perimeter mm | Green Contr. |
| *Allium cristophii* | 27.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Allium cristophii* | 17.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Allium cristophii* | 22.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Allium cristophii* | 22.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Allium cristophii* | 22.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Allium cristophii* | 22.5 | 111 | 17.13 | 127.89 | 0.3790 |
| *Aubrieta deltoidea* | 45.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 45.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 30.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 45.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 30.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 30.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 45.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Aubrieta deltoidea* | 40.0 | 314 | 20.13 | 74.42 | 0.2208 |
| *Argyanthemum frutescens*  | 30.0 | 606 | 30.26 | 233.53 | 0.4509 |
| *Argyanthemum frutescens*  | 17.5 | 606 | 30.26 | 233.53 | 0.4509 |
| *Argyanthemum frutescens*  | 17.5 | 606 | 30.26 | 233.53 | 0.4509 |
| *Argyanthemum frutescens*  | 30.0 | 606 | 30.26 | 233.53 | 0.4509 |
| *Argyanthemum frutescens*  | 30.0 | 606 | 30.26 | 233.53 | 0.4509 |
| *Argyanthemum frutescens*  | 30.0 | 606 | 30.26 | 233.53 | 0.4509 |
| *Bellis perennis* | 27.5 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 35.0 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 27.5 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 22.5 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 27.5 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 22.5 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* | 35.0 | 112 | 11.95 | 47.40 | 0.4995 |
| *Bellis perennis* 8 | 25.0 | 134 | 16.22 | 142.28 | 0.4995 |
| *Bellis perennis* 8 | 17.5 | 134 | 16.22 | 142.28 | 0.4995 |
| *Bellis perennis* 8 | 22.5 | 134 | 16.22 | 142.28 | 0.4995 |
| *Bellis perennis* 8 | 22.5 | 134 | 16.22 | 142.28 | 0.4995 |
| *Bellis perennis* 8 | 22.5 | 134 | 16.22 | 142.28 | 0.4995 |
| *Bellis perennis* 16 | 45.0 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 40.0 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 27.5 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 32.5 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 20.0 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 22.5 | 242 | 21.72 | 259.43 | 0.4995 |
| *Bellis perennis* 16 | 27.5 | 242 | 21.72 | 259.43 | 0.4995 |
| *Cotoneaster microphyllus* | 30.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 30.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 30.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Cotoneaster microphyllus* | 20.0 | 105 | 12.27 | 61.47 | 0.4628 |
| *Escallonia macrantha* | 27.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Escallonia macrantha* | 17.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Escallonia macrantha* | 27.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Escallonia macrantha* | 22.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Escallonia macrantha* | 22.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Escallonia macrantha* | 27.5 | 151 | 15.18 | 63.34 | 0.2546 |
| *Ranunculus bulbosus* | 22.5 | 174 | 15.01 | 54.55 | 0.4679 |
| *Ranunculus bulbosus* | 22.5 | 174 | 15.01 | 54.55 | 0.4679 |
| *Ranunculus bulbosus* | 22.5 | 174 | 15.01 | 54.55 | 0.4679 |
| *Ranunculus bulbosus* | 30.0 | 174 | 15.01 | 54.55 | 0.4679 |
| *Ranunculus bulbosus* | 22.5 | 174 | 15.01 | 54.55 | 0.4679 |
| *Ranunculus bulbosus* | 22.5 | 174 | 15.01 | 54.55 | 0.4679 |
| *Solanum crispum*  star | 27.5 | 190 | 20.74 | 126.33 | 0.4269 |
| *Solanum crispum*  star | 17.5 | 190 | 20.74 | 126.33 | 0.4269 |
| *Solanum crispum*  star | 22.5 | 190 | 20.74 | 126.33 | 0.4269 |
| *Solanum crispum*  star | 22.5 | 190 | 20.74 | 126.33 | 0.4269 |
| *Solanum crispum*  star | 22.5 | 190 | 20.74 | 126.33 | 0.4269 |
| *Spartium junceum* (en face) | 20.0 | 510 | 26.44 | 116.96 | 0.3789 |
| *Spartium junceum* (en face) | 40.0 | 510 | 26.44 | 116.96 | 0.3789 |
| *Spartium junceum* (en face) | 30.0 | 510 | 26.44 | 116.96 | 0.3789 |
| *Spartium junceum* (en face) | 40.0 | 510 | 26.44 | 116.96 | 0.3789 |
| *Spartium junceum* (en face) | 30.0 | 510 | 26.44 | 116.96 | 0.3789 |
| *Spartium* *junceum* (profile) | 20.0 | 288 | 25.14 | 112.51 | 0.3789 |
| *Spartium* *junceum* (profile) | 27.5 | 288 | 25.14 | 112.51 | 0.3789 |
| *Spartium* *junceum* (profile) | 20.0 | 288 | 25.14 | 112.51 | 0.3789 |
| *Spartium* *junceum* (profile) | 27.5 | 288 | 25.14 | 112.51 | 0.3789 |
| *Spartium* *junceum* (profile) | 35.0 | 288 | 25.14 | 112.51 | 0.3789 |