**Krahulec F., Krahulcová A., Urfus T. & Doležal J. (2020) Populations of *Pilosella* species in ruderal habitats in the city of Prague: consequences of the spread of *P. aurantiaca* and *P. rothiana*. Preslia 92: 167–190.**

Electronic appendix 1. – Individual plants recorded and their taxonomic, karyological and reproductive attributes. Locality codes: 1 – Háje; 2 – Hrnčíře; 3 – Řepy. Taxonomic determination was done by F. Krahulec and J. Chrtek; in questionable cases, the plants were revised/determined by Siegfried Bräutigam (Dresden, Germany). Methods used for determination of the reproductive system (RS): A – emasculation/open pollination experiment; B – FCSS analysis of seed doublets; C – FCSS analysis of pooled seed samples (six to ten seeds per sample) detecting the ploidal diversity among embryos; D – Chromosome number screening of germinating seeds detecting the karyological diversity among progeny. Using the method B, C, and D, the number of analysed seeds originating from open-pollinated maternal plants is given in parentheses. For description of the methods used for determination of RS, see Material and Methods section. Symbol M behind the chromosome number signifies the presence of a long hemizygous "marker" chromosome in the karyotype.

| **Taxonomic identity** | **Combination** | **Plant individual** | **Locality code** | **Year of collection** | **DNA-ploidy level** | **Chromosome number** | **RS** | **Determination of RS** | **Ploidy/chromosome number of embryos** | **Remark** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Basic species** | | | | | | | | | | |
| *P. aurantiaca* | | 1489 | 1 | 2008 | 2*n*~4*x* | | apomictic | C (50) | 4*x*, 2*x* | rare dihaploid embryos (2*x*) |
| | | 1604 | 1 | 2009 | 2*n*~4*x* | | | | | |
| | | 1606 | 1 | 2009 | 2*n*~4*x* | | | | | |
| | | 1874 | 1 | 2010 | 2*n*~4*x* | | apomictic | B (20) | 4*x* | |
| | | 2030A | 1 | 2012 | 2*n*~4*x* | | | | | |
| | | 2141 | 2 | 2013 | 2*n*~4*x* | | apomictic | B (18) | 4*x* | |
| *P. bauhini* subsp. *bauhini* | | 1481A | 1 | 2008 | 2*n*~5*x* | | | | | |
| | | 1481B | 1 | 2008 | 2*n*~5*x* | | apomictic | C (50) | 5*x* | |
| | | 1481C | 1 | 2008 | 2*n*~5*x* | | | | | |
| | | 1603 | 1 | 2009 | 2*n*~5*x* | | apomictic | C (26) | 5*x*, ca 2.2*x*, ca 2.8*x* | polyhaploid embryos (ploidy corresponding to ca 2.2*x* and 2.8*x*) |
| | | 1873 | 1 | 2010 | 2*n*~5*x* | | apomictic | A, B (14) | 5*x* | |
| | | 1484 | 1 | 2008 | 2*n*~6*x* | | apomictic | C (50) | 6*x*, 3*x* | rare trihaploid embryos (3*x*) |
| | | 1876 | 1 | 2010 | 2*n*~6*x* | | apomictic | A, B (16) | 6*x* | |
| | | 2130 | 2 | 2013 | 2*n*~5*x* | | apomictic | B (10) | 5*x*, ca 2.7*x* | a single polyhaploid embryo (ploidy |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | corresponding to ca 2,7*x*) |
| | | 2137 | 2 | 2013 | 2*n*~5*x* | | | | | |
| | | 2144 | 2 | 2013 | 2*n*~5*x* | | | | | |
| | | 2145 | 2 | 2013 | 2*n*~5*x* | | | | | |
| | | 2233 | 2 | 2018 | | 2*n*= 6*x*= 54, M | apomictic | A | | |
| | | 2236 | 2 | 2018 | | 2*n*= 6*x*= 54, M | | | | |
| *P. bauhini* subsp. *magyarica* | | 2240 | 2 | 2019 | | 2*n*= 6*x*= 54 | | | | |
| *P. caespitosa* | | 1486A | 1 | 2008 | 2*n*~4*x* | | apomictic | B (49) | 4*x* | |
| | | 1486B | 1 | 2008 | 2*n*~4*x* | | | | | |
| | | 1487 | 1 | 2008 | 2*n*~4*x* | | apomictic | B (40) | 4*x* | |
| | | 1602 | 1 | 2009 | 2*n*~4*x* | | apomictic | A | | |
| | | 1605 | 1 | 2009 | 2*n*~4*x* | | | | | |
| | | 1877A | 1 | 2010 | 2*n*~4*x* | | | | | |
| | | 1877B | 1 | 2010 | 2*n*~4*x* | | | | | |
| | | 2029 | 1 | 2012 | 2*n*~4*x* | 2*n*=4*x*=36, M | | | | |
| | | 2127 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2128 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2134 | 2 | 2013 | 2*n*~4*x* | | apomictic | B (10) | 4*x* | |
| | | 2138 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2140 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2143 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2181 | 2 | 2014 | 2*n*~4*x* | | | | | |
| | | 2225 | 2 | 2017 | | 2*n*=4*x*=36, M | apomictic | A | | |
| | | 2133 | 2 | 2013 | 2*n*~5*x* | | | | | |
| | | 2136 | 2 | 2013 | 2*n*~5*x* | | | | | |
| *P. officinarum* | | 1488A | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |
| | | 1488B | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1495A | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |
| | | 1495B | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |
| | | 2152 | 2 | 2013 | 2*n*~4*x* | | | | | |
| *P. piloselloides* | | 2126 | 2 | 2013 | 2*n*~5*x* | | apomictic | A, B (8) | 5*x* | |
| | | 2129 | 2 | 2013 | 2*n*~5*x* | | apomictic | A | | |
| | | 2135 | 2 | 2013 | 2*n*~5*x* | | apomictic | A, B (10) | 5*x* | |
| | | 2232 | 2 | 2018 | | 2*n*=5*x*=45, M | apomictic | A | | |
| **Intermediate species** | | | | | | | | | | |
| *P. densiflora* | *P. bauhini–P. cymosa* | 2242 | 2 | 2019 | | 2*n*=5*x*=45, M | apomictic | B (16) | 5*x* | |
| *P. glomerata* | *P. caespitosa–P. cymosa* | 2228 | 2 | 2018 | | 2*n*=5*x*=45, M | apomictic | A, B (10) | 5*x* | |
| *P. rothiana* | *P. echioides* > *P. officinarum* | 1480A | 1 | 2008 | 2*n*~4*x* | | apomictic | C (50) | 4*x* | |
| | | 1493A | 1 | 2008 | 2*n*~4*x* | | | | | |
| | | 1493B | 1 | 2008 | 2*n*~4*x* | | apomictic | A | | |
| | | 2132 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2142 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2230 | 2 | 2018 | | 2*n*=4*x*=36 | apomictic | A | | |
| *P. polymastix* | *P. bauhini–P caespitosa* | 1491B | 1 | 2008 | 2*n*~4*x* | | apomictic | C (40) | 4*x* | |
| *P. bauhini–P. setigera* | *P. bauhini*–[*P. cymosa–P. echioides*] | 2235 | 2 | 2018 | 2*n*~5*x* | | apomictic | B (16) | 5x | |
| | | 2241 | 2 | 2019 | | 2*n*=5*x*=45 | apomictic | B (8) | 5x | |
| *P. visianii* | *P. officinarum≤P. piloselloides* | 2131 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2139 | 2 | 2013 | 2*n*~4*x* | | | | | |
| | | 2184 | 3 | 2015 | 2*n*~4*x* | | apomictic | B (20) | 4*x* | |
| **Recent hybrids** | | | | | | | | | | |
| *P. xbrachiata* | *P. bauhini≤P. officinarum* | 1482A | 1 | 2008 | 2*n*~4*x* | | apomictic | A, C (50) | 4*x* | |
| | | 1483A | 1 | 2008 | 2*n*~4*x* | | apomictic | C (50) | 4*x*, 2*x* | a single dihaploid embryo |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1483B | 1 | 2008 | 2*n*~4*x* | | apomictic | C (29) | 4*x* | |
| | | 1491A | 1 | 2008 | 2*n*~4*x* | | apomictic | C (50) | 4*x* | |
| | | 1494C | 1 | 2008 | 2*n*~4*x* | | apomictic | A, C (50) | 4*x*, 2*x* | rare dihaploid embryos (2*x*) |
| *P.* x*leptophyton* | *P. bauhini*>*P. officinarum* | 1480C | 1 | 2008 | 2*n*~4*x* | | | | | |
| | | 2031 | 1 | 2012 | 2*n*~4*x* | | | | | |
| *P. officinarum*>*P. brachiata* | *P. officinarum* × [*P. bauhini*≤*P. officinarum*] | 1485A | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |
| | | 1485B | 1 | 2008 | | 2*n*=4*x*=36, M | sexual | A, C (7) | 4*x* | |
| | | 1485C | 1 | 2008 | 2*n*~4*x* | | sexual | A, B (10) | 3*x*, 4*x* | |
| | | 1496 | 1 | 2008 | 2*n*~4*x* | | sexual | A | | |
| *P. aurantiaca* × *P. leptophyton* | *P. aurantiaca* × [P. *bauhini*>*P. officinarum*] | 1492 | 1 | 2008 | 2*n*~4*x* | | sexual, semisterile | A, C (20) | 5*x*, 6*x*, 7*x* | |
| | | 1490A | 1 | 2008 | 2*n*~6*x* | | sexual | A, B (12) | 5*x*, 6x, 8x | a single octoploid embryo of 2*n*+*n* origin |
| | | 1490B | 1 | 2008 | 2*n*~6*x* | | | | | |
| *P.* ×*bifurca* | *P. officinarum* × *P. rothiana* [*P. echioides*≤*P. officinarum*] | 2231 | 2 | 2018 | | 2*n*=6*x*=54 | a low seed-set, parthenogenetic RS | A, B (10) | 3x, 6x, 7x | embryos mostly trihaploid, a sigle heptaploid embryo of *n*+2*n* origin. |
| *P. aurantiaca* × *P. bifurca* | *P. aurantiaca* × *P. bifurca* | 2237 | 2 | 2019 | | 2*n*=5*x*=45 | seed-sterile | A | | |
| *P. aurantiaca* × *P. rothiana* | *P. aurantiaca* × *P. rothiana* | 2239 | 2 | 2019 | | 2*n*=6*x*=54 | | | | |
| *P.* ×*derubella* | *P. aurantiaca* × *P. piloselloides* | 2223 | 2 | 2017 | | 2*n*=5*x*=45 | a reduced seed-set, sexual RS | A, B (6), D (13) | diverse, between 3*x* and 5*x* | common aneuploid progeny |
| *P.* ×*fuscoatra* | *P. aurantiaca* × *P. caespitosa* | 2226 | 2 | 2017 | | 2*n*=4*x*=36 | sexual | D (12) | 3x, 5x | progeny diverse in ploidy from a maternal plant |
| | | 2238 | 2 | 2019 | | 2*n*=4*x*=36 | apomictic | A, B (8) | 4x | |

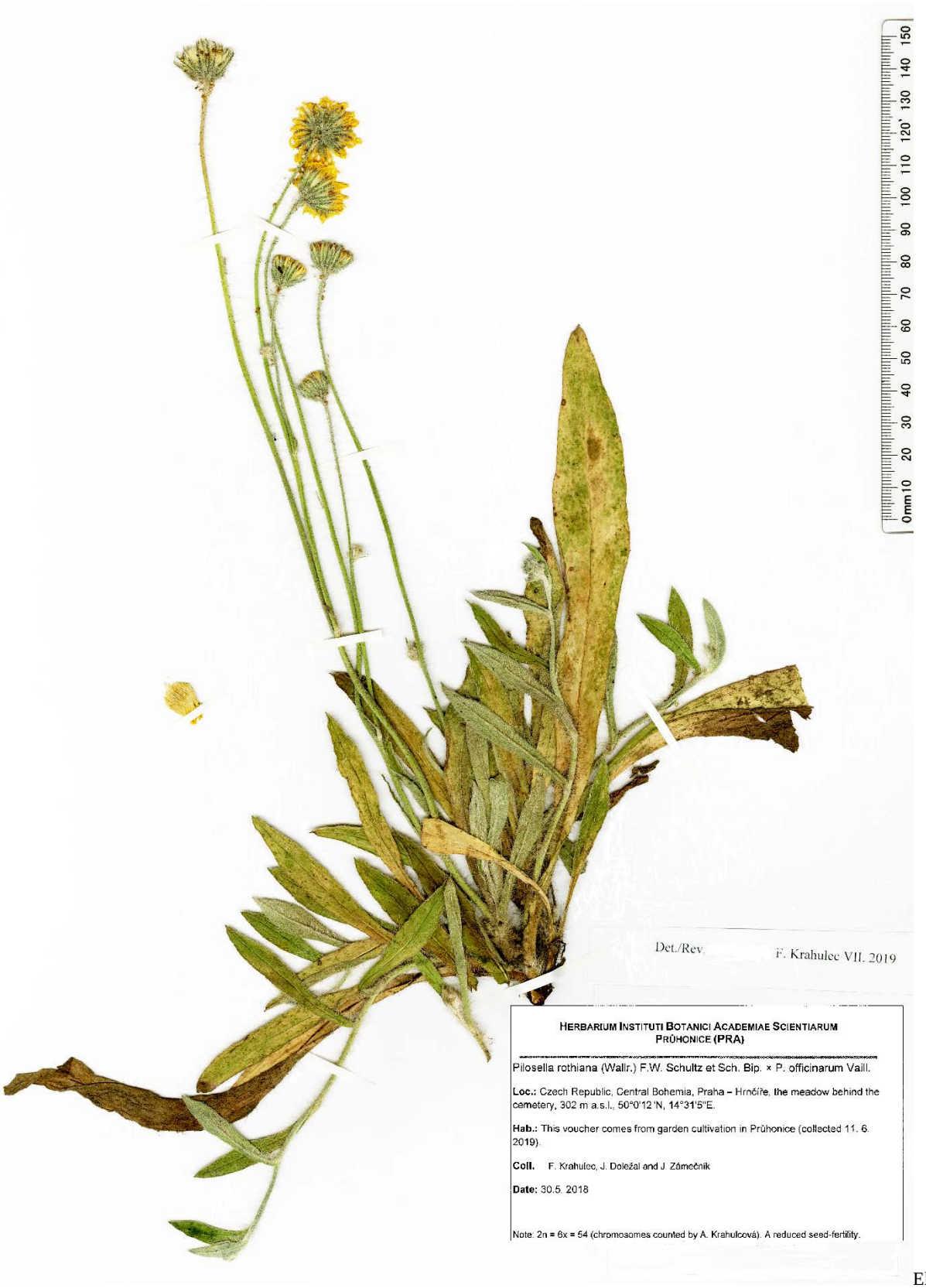
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *P.* ×*heterodoxa* | *P. piloselloides* × *P. rothiana* *P. piloselloides* × [*P. echioides*>*P. officinarum*] | 2243 | 2 | 2018 | | 2*n*=ca6*x*=53/54 (a somatic mosaic) | combined RS: parthenogenetic and potentially sexual | B (6) | 3x, 4x, 6x | most of seeds damaged by insects, only six achenes available for FCSS analysis (four trihaploid embryos detected among them) |
| *P.* ×*rubra* | *P. aurantiaca*>*P. officinarum* | | 2 | 2020 | 2*n*~6*x* | | | | | |
| *P. aurantiaca* × *P. visianii* | *P. aurantiaca* × [*P. officinarum*≤*P. piloselloides*] | 2186 | 3 | 2015 | 2*n*~4*x* | | seed-sterile | A | | |

Electronic Appendix 2. – Summarized karyological and reproductive data on *Pilosella* taxa that are involved in this study irrespective of the locality. The findings are compared with author´s previous two papers that referred to these taxa of *Pilosella* coming from other ruderal habitats in the city of Prague. Items on ploidy level are based on flow cytometry and/or chromosome counting. For hybrid formulae illustrating the parental combination in both intermediate species and recent hybrids, see Table 1. Abbreviations and symbols used: n.d. – reproduction mode not determined; • – the hybrid morphotypes corresponding to either *P. brachiata* or *P. leptophyton* were not distinguished in paper by Krahulcová et al. (2009), because all the hybrids between *P. bauhini* and P. *officinarum* were evaluated as one collective category. References: [a]Krahulcová et al. 2009; [b]Křišťálová et al. 2010.

| | Present data | Published data |
|---|---|---|
| Taxon | Ploidy level (2n), reproduction mode | Ploidy level (2n), reproduction mode[referrence] |
| Basic species | | |
| *P. aurantiaca* | 4x, apomictic | the species found but not studied[b] |
| *P. bauhini* subsp. *bauhini* | 5x, apomictic; 6x, apomictic | 4x, apomictic[a]; 5x, apomictic[a,b]; 6x, apomictic[b]; 6x, n.d. [a]; 7x, variable[a] |
| *P. bauhini* subsp. *magyarica* | 6x, n.d. | |
| *P. caespitosa* | 4x, apomictic; 5x, n.d. | 4x, n.d.[b]; 5x, n.d. [b] |
| *P. officinarum* | 4x, sexual | 4x, sexual[a, b]; 5x, sexual[a]; 6x, sexual [b]; 7x, n.d. [b] |
| *P. piloselloides* | 5x, apomictic | 5x, apomictic [b] |
| Intermediate species | | |
| *P. densiflora* | 5x, apomictic | the species found but not studied[b] |
| *P. glomerata* | 5x, apomictic | 5x, apomictic [b] |
| *P. rothiana* | 4x, apomictic | 4x, apomictic [b] |
| *P. bauhini – P. setigera* | 5x, apomictic | the species found but not studied[b] |
| *P. polymastix* | 4x, apomictic | |
| *P. visianii* | 4x, apomictic | 4x, apomictic[b] |
| Recent hybrids | | |
| *P. aurantiaca* × *P. rothiana* | 6x, n.d. | |
| *P. aurantiaca* × *P. bifurca* | 5x, seed-sterile | |
| *P. aurantiaca* × *P. leptophyton* | 4x, sexual; 6x, sexual | |
| *P. aurantiaca* × *P. visianii* | 4x, seed-sterile | |
| •*P. bauhini* × *P. officinarum* | | 4x, sexual[a]; 4x, apomictic[a]; 5x, sexual[a]; 5x, apomictic[a]; 6x, sexual[a]; 7x, apomictic[a]; 7x, variable[a]; 8x, variable[a]; aneuploids > 4x, mostly sexual[a] |
| *P.* ×*leptophyton* | 4x, n.d. | 5x, apomictic[b] |
| *P.* ×*brachiata* | 4x, apomictic | 4x, seed-sterile[b]; 4x, n.d. [b] |
| *P. officinarum* > *P. brachiata* | 4x, sexual | |
| *P.* ×*bifurca* | 6x, variable | |
| *P.* ×*derubella* | 5x, sexual | |
| *P.* ×*fuscoatra* | 4x, apomictic; 4x, sexual | |
| *P.* ×*heterodoxa* | 6x, variable | |


Electronic Appendix 3. – *Pilosella aurantiaca* × *P.* ×*leptophyton*, hexaploid plant..


Electronic Appendix 4. – *Pilosella bauhini* × *P. setigera*




Appendix 5. – *Pilosella ×bifurca*.

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Electronic Appendix 6. – *Pilosella ×fuscoatra*. Apomictic plant.


Electronic Appendix 7. – *Pilosella ×fuscoatra*. Sexual plant.