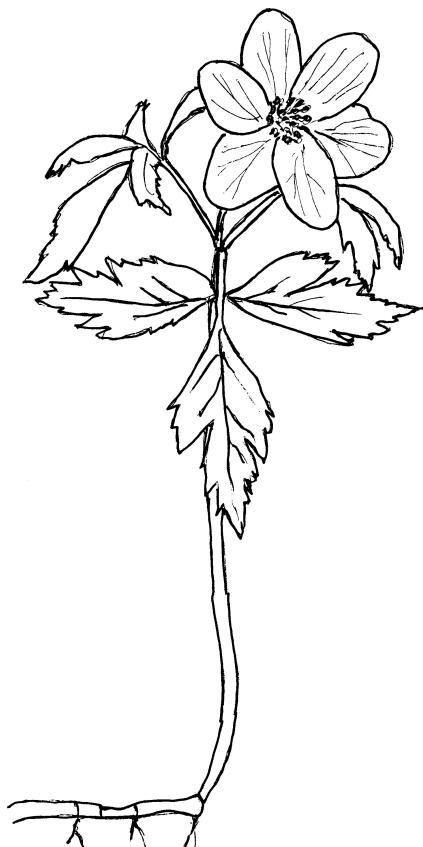


INDEX SEMINUM

Anemone nemorosa L.



TALLINN 2023

TALLINNA BOTANIKAAED



INDEX SEMINUM

anno 2022 collectorum

quae

HORTUS BOTANICUS TALLINNENSIS

pro mutua commutatione offert

Tallinn 2023

*Mandata inscribenda sunt:
Hortus Botanicus Tallinnensis
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11913 Tallinn
Estonie*

It is by the recipients of seeds to respect and to stand to international binding settlements of protection of endangered taxa and to uphold the interests of the nations of origin.

Es wird erwartet, dass die Empfänger von Saatgut international verbindliche Regelungen zum Schutz gefährdeter Sippen und zur Wahrung von Interessen der Herkunftsländer respektieren und einhalten.

Seeds can be ordered by desiderata card or e-mail (maximum 30 samples please):
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I Semina et sporae plantarum in horto botanico cultarum

PTERIDOPHYTA

Aspleniaceae

- + 1 *Cystopteris sandwicensis* Brack. (Kauai, 2012)
- + 2 *Stenochlaena tenuifolia* (Desv.) T.Moore

Pteridaceae

- + 3 *Hemionitis cordata* Roxb. ex Hook. & Grev. (Cluj-Napoca, 2019)
- + 4 *Hemionitis palmata* L. (Cluj-Napoca, 2019)

SPERMATOPHYTA

GYMNOSPERMAE

Cupressaceae

- 5 *Chamaecyparis lawsoniana* (A.Murray bis) Parl. cv. **Glaucia** (Cluj, 1958)
- 6 *Chamaecyparis nootkatensis* (D.Don) Spach (Ås, 1996)
- + 7 *Cupressus sempervirens* L.
- 8 *Juniperus chinensis* L. (Beijing, 1988)
- + 9 *Juniperus oxycedrus* L. (Croatia, 2009)
- 10 *Juniperus squamata* Buch.-Ham. ex D.Don cv. **Meyeri** (Moscow, 1961)
- * 11 *Microbiota decussata* Kom. (*Rossia extremiorientalis*, Mt. Khualaza, 1961)
- 12 *Microbiota decussata* Kom. (Estonia, Tallinn, 1999)
- 13 *Thuja koraiensis* Nakai (Tartu, 1982)
- 14 *Thuja occidentalis* L. (Estonia, Tallinn, 1968)
- 15 *Thuja plicata* Donn ex D.Don (Estonia, Kuusnõmme, 1961)
- 16 *Thuja plicata* Donn ex D.Don × *Thuja standishii* (Gordon) Carriere (Salaspils, 2004)
- 17 *Thuja standishii* (Gordon) Carrière (Salaspils, 1990)

Pinaceae

- * 18 *Picea glehnii* (F.Schmidt) Mast. (*Insulae Kurienses, Kunashiri*, 1982)
- 19 *Tsuga diversifolia* (Maxim.) Mast (Estonia, Järvselja, 1989)

Taxaceae

- 20 *Taxus baccata* L.
- 21 *Taxus cuspidata* Siebold & Zucc.

+ = Seeds collected in the Greenhouses / Samen aus den Gewächshäusern

* = Seeds of a cultivated plant of known wild origin / Samen von kultivierten Pflanzen bekannter Wildherkunft

A = Seeds of a cultivated plant from Audaku Experimental Station (Saaremaa Island, 58.29806, 22.10250) / Samen von kultivierten Pflanzen von wissenschaftlicher Beobachtungsstelle Audaku (Insel Ösel, 58.29806, 22.10250)

ANGIOSPERMAE***Dicotyledoneae******Acanthaceae***

- 22 *Acanthus mollis* L. (Wrocław, 1973)
 + 23 *Crossandra nilotica* Oliv.
 + 24 *Ruellia brevifolia* (Pohl.) C.Ezcurra

Aceraceae

- A 25 *Acer argutum* Maxim. (Rogów, 2002)
 26 *Acer barbinerve* Maxim.
 A 27 *Acer caudatum* Wall. ex Rehder **subsp. *ukurunduense*** (Trautv. & C.A.Mey.) E.Murray (Rogów, 2002)
 28 *Acer circinatum* Pursh (København, 1958)
 A* 29 *Acer mandshuricum* Maxim. (*Rossia extremiorientalis*, Lazo, 1977)
 * 30 *Acer mandshuricum* Maxim. (*Rossia extremiorientalis*, Lazo, 1977)
 31 *Acer mono* Maxim.
 A 32 *Acer monspessulanum* L. **subsp. *turcomanicum*** (Pojark.) E.Murray (Ashgabat, 1957)
 33 *Acer negundo* L. (Estonia, Tallinn, 1959)
 * 34 *Acer negundo* L. var. *interius* (Britton) Sarg. (Edmonton, 1967)
 35 *Acer pseudoplatanus* L. (Estonia, Tallinn, 1959)
 36 *Acer pseudoplatanus* L. f. *erythrocarpum* (Carriere) Pax (Kalinigrad, 1965)
 37 *Acer pseudoplatanus* L. f. *purpureum* (Loudon) Rehder (Estonia, Järveselja, 1958)
 * 38 *Acer pseudosieboldianum* (Pax) Kom. (*Rossia extremiorientalis*, Lazo, 1977)
 39 *Acer stachyophyllum* Hiern (København, 1965)
 40 *Acer tataricum* L. **subsp. *aidzuense*** (Franch.) P.C.De Jong (Tsukuba, 2003)
 A* 41 *Acer tegmentosum* Maxim. (*Rossia extremiorientalis*, Kedrovaya Pad', 1961)
 42 *Acer triflorum* Kom. (Utrecht, 2010)

Actinidiaceae

- 43 *Actinidia arguta* (Siebold & Zucc.) Planch. ex Miq. cv. **Weiki × Pururna Sadova** (Estonia, Tallinn, 2010)
 44 *Actinidia kolomikta* (Rupr. & Maxim.) Maxim.

Anacardiaceae

- 45 *Cotinus coggygria* Scop.
 46 *Rhus typhina* L. (Estonia, Kuressaare, 1977)

Apiaceae

- 47 *Ammi visnaga* (L.) Lam. (Tübingen, 2016)
 * 48 *Eryngium alpinum* L. (Klagenfurt, 2014) IPEN nr: AT-1-KL-2013/2656

Aquifoliaceae

- 49 *Ilex laevigata* (Pursh) A.Gray (Holland, 1993)
- 50 *Ilex laevigata* (Pursh) A.Gray (Salzburg, 1987)

Araliaceae

- * 51 *Eleutherococcus senticosus* (Rupr. & Maxim.) Maxim. (*Rossia extremiorientalis*, Lazo, 1977)
- 52 *Eleutherococcus senticosus* (Rupr. & Maxim.) Maxim. (Dolinsk, 1962)
- * 53 *Eleutherococcus sessiliflorus* (Rupr. & Maxim.) S.Y.Hu (*Rossia extremiorientalis*, Artem, 1961)
- + 54 *Fatsia japonica* (Thunb.) Decne. & Planch.
- * 55 *Oplopanax elatus* (Nakai) Nakai (*Rossia extremiorientalis*, Mt. Khualaza, 1961)
- * 56 *Oplopanax horridus* (Sm.) Miq. (Seattle, 1978)
- + 57 *Polyscias filicifolia* (C.Moore ex E.Fourn.) L.H.Bayley

Asteraceae

- * 58 *Aster amellus* L. (AGS, 2017)
- * 59 *Centaurea ruthenica* Lam. (Samara, 2017)
- * 60 *Hypochaeris uniflora* Vill. (Salzburg, 2004)
- * 61 *Leontopodium nivale* (Ten.) Huet ex Hand.-Mazz. **subsp. *alpinum*** (Cass.) Greuter (Wien, 2016)

Begoniaceae

- + 62 *Begonia carolineifolia* Regel (Northampton, 1995)
- + 63 *Begonia convolvulacea* (Klotzsch) A.DC.
- + 64 *Begonia venosa* Skan ex Hook.f. (Lyon, 1999)

Berberidaceae

- 65 *Berberis aggregata* C.K.Schneid. (Stockholm, 1957)
- A* 66 *Berberis amurensis* Rupr. var. *japonica* (Regel) Rehder (Tsukuba, 1999)
- 67 *Berberis japonica* Rupr. var. *japonica* (Regel) Rehder (Tsukuba, 1995)
- A 68 *Berberis koreana* Palib. (Hørsholm, 1991)
- 69 *Berberis koreana* Palib. (Hørsholm, 1991)
- 70 *Berberis parvifolia* Sprague (Berlin-Dahlem, 1957)
- 71 *Berberis sieboldii* Miq. (Eberswalde, 1997)
- 72 *Berberis thunbergii* DC. cv. *Erecta* (Ottawa, 1960)
- 73 *Berberis thunbergii* DC. var. *maximowiczii* (Regel) Regel (Moscow, 1998)
- 74 *Berberis thunbergii* DC. cv. *Silver Beauty* (Moscow, 1961)
- 75 *Berberis vulgaris* L. cv. *Atropurpurea*
- 76 *Mahonia aquifolium* (Pursh) Nutt. × *Mahonia repens* (Lindl.) G.Don (Estonia, Tallinn, 1957)
- + 77 *Nandina domestica* Thunb. ex Murray (Kyoto, 1978)

Betulaceae

- * 78 ***Alnus crispa*** (Aiton) Pursh (Vancouver, 1981)
- * 79 ***Alnus fruticosa*** Rupr. (*Rossia extremiorientalis*, Zeya, 1975)
 - 80 ***Alnus hirsuta*** (Spach) Rupr. (Rogów, 1977)
- * 81 ***Alnus incana*** (L.) Moench (*Estonia, Tallinn*, 1975)
 - 82 ***Alnus japonica*** (Thunb.) Steud.
 - 83 ***Alnus japonica*** (Thunb.) Steud. (Nayoro, 1973)
 - 84 ***Alnus ×pubescens*** Tausch (Tallinn, Kloostrimetsa, 1975)
 - 85 ***Alnus viridis*** (Chaix) DC. (Rogów, 1973)
 - 86 ***Betula ×aurata*** Borkh.
- * 87 ***Betula fruticosa*** Pall. (*Rossia extremiorientalis*, Olga, 1977)
 - 88 ***Betula humilis*** Schrank
- * 89 ***Betula pendula*** Roth var. ***carelica*** (Mercklin) Hämet-Ahti (*Finlandia*, 1959)
 - 90 ***Betula pendula*** Roth var. ***oycoviensis*** (Besser) Dippel (Lublin, 1974)
 - 91 ***Betula pendula*** Roth var. ***oycoviensis*** (Besser) Dippel (St. Petersburg, 1957)
- * 92 ***Betula platyphylla*** Sukaczev var. ***japonica*** (Miq.) Hara (*Insula Sachalin, Novoalexandrovsk*, 1961)
 - 93 ***Betula pubescens*** Ehrh. cv. ***Fruticosa*** (Estonia, Saku, 2003)
- * 94 ***Betula pumila*** L. var. ***glandulifera*** Regel (Montréal, 1991)
 - 95 ***Betula tatewakiana*** M.Ohki & Watan. (Bayreuth, 2004)
 - 96 ***Betula utilis*** D.Don var. ***utilis*** (Berlin-Dahlem, 1974)
 - 97 ***Carpinus betulus*** L. cv. ***Incisa*** (København, 1965)
- A* 98 ***Carpinus caroliniana*** Walter (Ottawa, 1967)
- * 99 ***Carpinus caroliniana*** Walter (Ottawa, 1967)

Bixaceae

- + 100 ***Bixa orellana*** L. (Tartu, 2011)

Boraginaceae

- * 101 ***Echium russicum*** J.F.Gmel (Pyatigorsk, 2016)
- 102 ***Lithospermum purpureocaeruleum*** L. (Bucureşti, 1976)

Brassicaceae

- 103 ***Alliaria petiolata*** (M.Bieb.) Cavara & Grande (Caen, 2017)
- * 104 ***Coluteocarpus vesicaria*** (L.) Holmboe (München, 2014)
 - IPEN nr: GE-0-M-2013/1901
- * 105 ***Draba norvegica*** Gunnerus (Akureyri, 2005)
- 106 ***Schivereckia podolica*** (Besser) Andrz. (Leisnig, 2000)

Cactaceae

- + 107 ***Cleistocactus smaragdiflorus*** (F.A.C.Weber) Britton & Rose

Campanulaceae

- * 108 ***Asyneuma campanuloides*** (M.Bieb. ex Sims) Bornm. (Pyatigorsk, 2014)

Caprifoliaceae

- 109 *Diervilla rivularis* Gatt. (Dushanbe, 1957)
- 110 *Diervilla sessilifolia* Buckland (Leiden, 1957)
- 111 *Dipelta yunnanensis* Franch. (Leipzig, 2010)
- A 112 *Kolkwitzia amabilis* Graebn.
- 113 *Kolkwitzia amabilis* Graebn.
- * 114 *Lonicera caerulea* L. (Chambésy, 1979)
- * 115 *Lonicera caerulea* L. var. *edulis* Regel (*Paeninsula Camtschatca*, Severnye Koryaki, 1971)
- A* 116 *Lonicera caucasica* Pall. (Moscow, 1989)
- 117 *Lonicera caucasica* Pall.
- 118 *Lonicera ferdinandi* Franch. (Berlin-Dahlem, 1979)
- 119 *Lonicera ×heckrottii* Rehder (Estonia, Ellamaa, 2009)
- 120 *Lonicera iberica* M.Bieb. (Tbilisi, 1964)
- 121 *Lonicera involucrata* (Richardson) Banks ex Spreng. (Berlin-Dahlem, 1978)
- 122 *Lonicera korolkowii* Stafp
- A 123 *Lonicera ledebourii* Eschsch. (Kórnik, 1999)
- 124 *Lonicera ledebourii* Eschsch. (Kórnik, 1999)
- 125 *Lonicera maackii* (Rupr.) Maxim. (Khabarovsk, 1967)
- 126 *Lonicera myrtillus* Hook.f. & Thomson (Lausanne, 1962)
- * 127 *Lonicera nigra* L. (Sarajevo, 1983)
- A 128 *Lonicera periclymenum* L. (Antwerpen, 1958)
- 129 *Lonicera periclymenum* L.
- 130 *Lonicera periclymenum* L. cv. *Quercifolium* (Salaspils, 1996)
- 131 *Lonicera prolifera* (G.Kirchn.) Rehder
- * 132 *Lonicera ruprechtiana* Regel (*Rossia extremiorientalis*, Ternei, 1979)
- 133 *Lonicera tatarica* L. (Barnaul, 1977)
- 134 *Lonicera tatarica* L. cv. *Alba* (Northampton, 1963)
- 135 *Lonicera vesicaria* Kom. (Minsk, 1997)
- A 136 *Lonicera vesicaria* Kom. (Vilnius, 2002)
- 137 *Sambucus canadensis* L. cv. *Aurea*
- A 138 *Sambucus sieboldiana* Blume ex Miq. (Rogów, 1997)
- * 139 *Sambucus williamsii* Hance (*Rossia extremiorientalis*, Talmi, 1961)
- * 140 *Symporicarpos albus* (L.) S.F.Blake (East Lansing, 1974)
- 141 *Symporicarpos albus* (L.) S.F.Blake var. *laevigatus* (Fernald) S.F.Blake (Estonia, Tallinn, 1966)
- 142 *Symporicarpos occidentalis* Hook. (Ottawa, 1968)
- 143 *Weigela florida* (Bunge) A.DC. (Pyongyang, 1988)
- * 144 *Weigela middendorffiana* (Trautv. & C.A.Mey.) K.Koch (*Insula Sachalin*, Mt. Chekhov, 1961)
- * 145 *Viburnum dentatum* L. var. *deamii* (Rehder) Fernald (Philadelphia, 1993)
- 146 *Viburnum lantana* L.
- 147 *Viburnum lantana* L. cv. *Variegatum* (Estonia, Järvselja, 1958)

- 148 *Viburnum lentago* L. (Estonia, Luua, 1957)
- 149 *Viburnum mongolicum* (Pall.) Rehder (Girionys, 2009)
- 150 *Viburnum sargentii* Koehne
- 151 *Viburnum sargentii* Koehne f. *calvescens* (Rehder) Rehder (Kiev, 1957)
- * 152 *Viburnum trilobum* Marshall (East Lansing, 2008)
- * 153 *Viburnum wrightii* Miq. (*Insulae Kurilenses, Etorofu*, 1961)

Caricaceae

- + 154 *Carica papaya* L.

Caryophyllaceae

- 155 *Dianthus carthusianorum* L. (Tübingen, 2015)
- 156 *Dianthus erinaceus* Boiss. (Brno, 2008)
- 157 *Dianthus knappii* (Pant.) Asch. & Kanitz ex Borbás (Besançon, 2009)
- * 158 *Dianthus sylvestris* Wulfen (Neuchatel, 2018) IPEN nr: CH0NEU-20170011
- 159 *Silene zawadzkii* Herbich (Stuttgart-Hohenheim, 1990)

Celastraceae

- 160 *Celastrus scandens* L.
- 161 *Euonymus alatus* (Thunb.) Siebold (Kyoto, 1985)
- A 162 *Euonymus alatus* (Thunb.) Siebold (Kyoto, 1998)
- 163 *Euonymus europaeus* L. (Estonia, Harku, 1959)
- 164 *Euonymus hamiltonianus* Wall. subsp. *maackii* (Rupr.) Kom. (Vladivostok, 1961)
- * 165 *Euonymus hamiltonianus* Wall. subsp. *sieboldianus* (Blume) Hara (*Insula Sachalin, Mt. Chekhov*, 1961)
- 166 *Euonymus latifolius* (L.) Mill. (Estonia, Tallinn, 1989)
- A* 167 *Euonymus macropterus* Rupr. (*Rossia extremiorientalis, Mt. Khualaza*, 1961)
- 168 *Euonymus macropterus* Rupr.
- * 169 *Euonymus obovatus* Nutt. (East Lansing, 1999)
- A 170 *Euonymus oxyphyllus* Miq. (Kyoto, 1988)
- * 171 *Euonymus pauciflorus* Maxim. (*Rossia extremiorientalis, Khekhtsir*, 1975)
- 172 *Euonymus phellomanus* Loes. (Eberswalde, 1997)
- 173 *Euonymus sanguineus* Loes. ex Diels (Stuttgart-Hohenheim, 2014)
- 174 *Tripterygium regelii* Sprague & Takeda

Cercidiphyllaceae

- 175 *Cercidiphyllum japonicum* Siebold & Zucc. var. *magnificum* Nakai

Chenopodiaceae

- 176 *Chenopodium quinoa* Willd.

Clusiaceae

- 177 ***Hypericum ascyron*** L. (Vladivostok, 2016)
- 178 ***Hypericum olympicum*** L. (Leipzig, 2017)
- 179 ***Hypericum patulum*** Thunb. (Amsterdam, 2014)
- 180 ***Hypericum reptans*** Hook.f. & Thomson ex Dryer (Kiel, 2017)

Cornaceae

- 181 ***Cornus alba*** L.
- 182 ***Cornus alba*** L. cv. **Sibirica Variegata**
- A 183 ***Cornus amomum*** Mill. (Rogów, 2004)
- * 184 ***Cornus amomum*** Mill. (East Lansing, 2003)
- * 185 ***Cornus asperifolia*** Michx. var. ***drummondii*** (C.A.Mey.) Coulter. & W.H.Evans (Lisle, 1997)
- * 186 ***Cornus australis*** C.A.Mey. (Moscow, 1989)
- 187 ***Cornus mas*** L.
- * 188 ***Cornus sanguinea*** L. (*Estonia, Lümanda*, 2010)
- A* 189 ***Cornus sericea*** L. (Niagara Falls, 2011)

Crassulaceae

- + 190 ***Kalanchoe nyikae*** Engl. (München, 1995)
- + 191 ***Kalanchoe rotundifolia*** Haw. (Basel, 1994)

Cucurbitaceae

- 192 ***Cucumis dipsaceus*** Ehrenb. ex Spach (Iași, 2022)
- 193 ***Cucumis myriocarpus*** Naudin (Brno, 2022)
- 194 ***Cyclanthera pedata*** (L.) Schrad (Riga, 2021)
- 195 ***Ecballium elaterium*** (L.) A.Rich. (Meise, 2018)

Dipsacaceae

- 196 ***Knautia macedonica*** Griseb. (Hermannshof/Weinheim, 2016)

Elaeagnaceae

- 197 ***Elaeagnus commutata*** Bernh. ex Rydb. (Estonia, Järvselja, 1960)
- 198 ***Elaeagnus umbellata*** Thunb. (Estonia, Polli, 1975)
- * 199 ***Hippophae rhamnoides*** L. (Wrocław, 1997)

Ericaceae

- + 200 ***Arbutus unedo*** L. (Hamma, 2010)
- 201 ***Enkianthus campanulatus*** (Miq.) G.Nicholson (Edinburgh, 1962)
- * 202 ***Ledum groenlandicum*** Oeder (Vancouver, 1962)
- * 203 ***Ledum palustre*** L. var. ***dilatatum*** Wahlenb. (*Rossia extremiorientalis, Sovetskaya Gavan'*, 1967)
- * 204 ***Menziesia pentandra*** Maxim. (*Insulae Kurilenses, Kunashiri*, 1981)
- 205 ***Menziesia pilosa*** (Michx.) Juss.
- 206 ***Rhododendron brachycarpum*** D.Don ex G.Don

- 207 *Rhododendron brachycarpum* D.Don ex G.Don (Edinburgh, 1958)
 208 *Rhododendron catawbiense* Michx. (Chemnitz, 2002)
 209 *Rhododendron insigne* Hemsl. & E.H.Wilson × *Rhododendron* sp.
 (Edinburgh, 1958)
 210 *Rhododendron luteum* Sweet
 211 *Rhododendron maximum* L. (Antwerpen, 1962)
 212 *Rhododendron minus* Michx. cv. *Carolinianum Album* (Edinburgh, 1958)
 213 *Rhododendron minus* Michx. subsp. *minus* (Hørsholm, 1991)
 214 *Rhododendron molle* (Blume) G.Don subsp. *japonicum* (A.Gray) K.Kron
 * 215 *Rhododendron schlippenbachii* Maxim. (*Rossia extremiorientalis*, Talmi, 1961)
 216 *Rhododendron smirnowii* Trautv.
 217 *Vaccinium arctostaphylos* L. (Paris, 1966)

Euphorbiaceae

- 218 *Securinega suffruticosa* (Pall.) Rehder

Fabaceae

- A 219 *Caragana arborescens* Lam.
 220 *Caragana aurantiaca* Koehne (Wien, 1965)
 221 *Caragana densa* Kom. (Lublin, 2005)
 222 *Caragana frutex* (L.) K.Koch (Kiev, 1957)
 223 *Caragana pygmaea* (L.) DC. (Salaspils, 2005)
 * 224 *Caragana spinosa* (L.) DC. (*Sibiria australis*, Kyzyl, 1985)
 225 *Chamaecytisus ruthenicus* (Fisch. ex Wol.) Klásk. (Prezemysl, 2006)
 A 226 *Chamaecytisus supinus* (L.) Link (Tartu, 1957)
 227 *Colutea arborescens* L.
 A 228 *Colutea ×media* Willd. (Bayreuth, 2006)
 229 *Colutea ×media* Willd. (Salaspils, 1964)
 230 *Cytisus nigricans* L.
 231 *Cytisus nigricans* L. (laši, 2017)
 232 *Glycine max* (L.) Merr. cv. Laulema
 233 *Laburnum alpinum* (Mill.) Bercht. & J.Presl
 234 *Laburnum anagyroides* Medik. cv. *Quercifolium* (Yalta, 1967)
 235 *Phaseolus vulgaris* L. cv. Vändra Vahauba
 236 *Pisum sativum* L. cv. Aamisepp
 237 *Robinia ×holdtii* Beissn. (Estonia, Laulasmaa, 1965)

Fagaceae

- 238 *Nothofagus antarctica* (G.Forst.) Oerst. (Hørsholm, 1994)

Gesneriaceae

- + 239 *Rhytidophyllum tomentosum* (L.) Mart. (Halle, 2003)

Grossulariaceae

- 240 *Ribes alpinum* L. (Estonia, 1965)
- 241 *Ribes americanum* Mill.
- 242 *Ribes burejense* Fr.Schmidt (Vilnius, 1991)
- 243 *Ribes divaricatum* Douglas (Vilnius, 1991)
- 244 *Ribes komarovii* Pojark. (Bayreuth, 1997)
- * 245 *Ribes mandshuricum* (Maxim.) Kom. (*Rossia extremiorientalis*, Okeanskaya, 1981)
- 246 *Ribes niveum* Lindl. (Vilnius, 2003)
- 247 *Ribes petraeum* Wulfen
- 248 *Ribes sanguineum* Pursh (Oslo, 1957)

Hamamelidaceae

- 249 *Hamamelis japonica* Siebold & Zucc.
- 250 *Hamamelis japonica* Siebold & Zucc. **cv. Zuccariniana** (Berlin-Dahlem, 1959)

Hydrangeaceae

- * 251 *Deutzia parviflora* Bunge var. *amurensis* Regel (*Rossia extremiorientalis*, 1961)
- 252 *Hydrangea arborescens* L. (Riga, 1965)
- 253 *Hydrangea arborescens* L. **subsp. *radiata*** (Walter) E.M.McClint (Kalmthout, 1999)
- 254 *Hydrangea heteromalla* D.Don
- * 255 *Hydrangea paniculata* Siebold (*Insulae Kurienses, Kunashiri*, 1981)
- 256 *Hydrangea paniculata* Siebold **cv. Praecox** (Estonia, Tallinn, 1970)
- 257 *Philadelphus coronarius* L. **cv. Aureus**

Juglandaceae

- A 258 *Juglans regia* L. (Tashkent, 1958)
- 259 *Pterocarya fraxinifolia* (Lam.) Spach
- A 260 *Pterocarya stenoptera* C.DC. (Beijing, 1980)
- 261 *Pterocarya stenoptera* C.DC. (Beijing, 1957)

Lamiaceae

- 262 *Horminum pyrenaicum* L. **cv. Roseum**
- * 263 *Lavandula angustifolia* Mill. (Grenoble, 2002)
- * 264 *Salvia pratensis* L. (Jena, 1989)
- * 265 *Salvia tesquicola* Klok. & Pobel. (Pyatigorsk, 2013)
- 266 *Scutellaria alpina* L. (Oldenburg, 1993)

Malvaceae

- 267 *Kitaibelia vitifolia* Willd. (Jena, 2017) IPEN nr: MK-0-JENA-7572646

Moraceae

- + 268 ***Dorstenia contrajerva*** L. (Strassbourg, 1961)
- + 269 ***Dorstenia elata*** Gardner (Düsseldorf, 1994)
- 270 ***Morus alba*** L.
- 271 ***Morus australis*** Poir. (Cluj, 1965)
- * 272 ***Morus rubra*** L. (Lisle, 1991)

Myricaceae

- 273 ***Myrica pensylvanica*** Lam.

Myrsinaceae

- + 274 ***Ardisia japonica*** (Thunb.) Blume (Batumi, 1984)

Myrtaceae

- + 275 ***Psidium littorale*** Raddi (Stockholm, 1964)

Oleaceae

- 276 ***Forsythia ovata*** Nakai (St. Petersburg, 1958)
- 277 ***Fraxinus chinensis*** Roxb. (Beijing, 1985)
- A* 278 ***Fraxinus chinensis*** Roxb. var. ***rhynchophylla*** (Hance) Hemsl.
(*Rossia extremiorientalis*, Shamora, 1961)
- * 279 ***Fraxinus chinensis*** Roxb. var. ***rhynchophylla*** (Hance) Hemsl.
(*Rossia extremiorientalis*, Shamora, 1961)
- * 280 ***Fraxinus latifolia*** Benth. (Vancouver, 1982)
- 281 ***Fraxinus pennsylvanica*** Marshall
- 282 ***Ligustrum ibota*** Siebold & Zucc. (København, 1991)
- 283 ***Ligustrum obtusifolium*** Siebold & Zucc. (Poznań, 1999)
- * 284 ***Ligustrum tschonoskii*** Decne. (*Insula Sachalin, Mt. Chekhov*, 1961)
- 285 ***Ligustrum tschonoskii*** Decne. var. ***glabrescens*** Koidz. (Hørsholm, 1991)
- * 286 ***Ligustrum vulgare*** L. (Salzburg, 1983)
- 287 ***Ligustrum vulgare*** L. cv. ***Aureovariegatum*** (Salaspils, 1964)
- 288 ***Syringa pekinensis*** Rupr.
- 289 ***Syringa reticulata*** (Blume) H.Hara
- * 290 ***Syringa reticulata*** (Blume) H.Hara subsp. ***amurensis*** (Rupr.) P.S.Green & M.C.Chang (*Rossia extremiorientalis*, Okeanskaya, 1961)

Onagraceae

- + 291 ***Fuchsia procumbens*** R.Cunn. (Tallinn ZOO, 2009)

Paeoniaceae

- * 292 ***Paeonia tenuifolia*** L. (Pyatigorsk, 2013)

Papaveraceae

- 293 ***Sanguinaria canadensis*** L. (Uppsala, 1974)

Passifloraceae

- + 294 ***Passiflora coriacea*** Juss. (Leiden, 2004)

Phyllanthaceae

- + 295 ***Phyllanthus grandifolius*** L.

Phytolaccaceae

- + 296 ***Rivina humilis*** L. (Tartu, 1959)

Piperaceae

- + 297 ***Piper auritum*** Kunth (Villers-lès-Nancy, 1991)
- + 298 ***Piper longum*** L. (Tübingen, 2005)
- + 299 ***Piper unguiculatum*** Ruiz & Pav.

Pittosporaceae

- + 300 ***Pittosporum crassifolium*** Banks & Sol. ex A.Cunn.

Plantaginaceae

- + 301 ***Tetranema roseum*** (M.Martens & Galeotti) Standl. & Steyerm.

Portulacaceae

- 302 ***Lewisia pygmaea*** (A.Gray) B.L.Rob. (Dresden, 1999)

Proteaceae

- + 303 ***Hakea trineura*** F.Muell. (Canberra, 2003)
- + 304 ***Stenocarpus salignus*** R.Br. (South-Yarra, 1980)

Ranunculaceae

- 305 ***Adonis vernalis*** L. (Bydgoszcz, 1961)
- 306 ***Clematis koreana*** Kom. (Kristiansand, 1996)
- * 307 ***Delphinium retrofractum*** (Huth) Sambuk (AGS, 2016)
- 308 ***Pulsatilla albana*** (Steven) Bercht. & J.Presl (Wien, 1998)
- * 309 ***Pulsatilla vulgaris*** Mill. (Würzburg, 2017) IPEN nr: DE-0-WURZB-2016-17-Z-10
- 310 ***Pulsatilla vulgaris*** Mill. cv. ***Alba*** (Hamburg, 1970)
- 311 ***Pulsatilla vulgaris*** Mill. cv. ***Rubra*** (Liberec, 1972)

Rhamnaceae

- * 312 ***Rhamnus alpina*** L. (Champex, 1992)
- * 313 ***Rhamnus cathartica*** L. (*Estonia, Insula Muhu, Kuivastu*, 1999)
- 314 ***Rhamnus davurica*** Pall. var. ***nipponica*** Makino (Novosibirsk, 2003)
- 315 ***Rhamnus diamantiaca*** Nakai (Vladivostok, 1973)
- 316 ***Rhamnus fallax*** Boiss.
- 317 ***Rhamnus japonica*** Maxim. (Trondheim, 1998)
- 318 ***Rhamnus pallasii*** Fisch. & C.A.Mey. (Pyatigorsk, 2004)
- 319 ***Rhamnus parvifolia*** Bunge (Barnaul, 1998)
- 320 ***Rhamnus saxatilis*** Jacq. (Ljubljana, 2004)

Rosaceae

- 321 *Amygdalus nana* L. (syn. *Prunus tenella* Batsch)
- 322 *Amygdalus petunnikowii* Litv. (syn. *Prunus petunnikowii* (Litv.) Rehder)
(Nizhniy Novgorod, 2006)
- 323 *Aronia arbutifolia* (L.) Pers. f. *leiocalyx* Rehder (Essen, 1957)
- 324 *Aronia melanocarpa* (Michx.) Elliot (Wisley, 1996)
- 325 *Cerasus avium* (L.) Moench (syn. *Prunus avium* L.)
- 326 *Cerasus maximowiczii* (Rupr.) Kom. (syn. *Prunus maximowiczii* Rupr.)
- 327 *Cerasus pumila* L. var. *depressa* (Pursh.) Cinovskis (syn. *Prunus pumila*
var. *depressa* (Pursh) Gleason)
- 328 *Chaenomeles japonica* (Thunb.) Lindl. ex Spach
- 329 *Cotoneaster dammeri* C.K.Schneid. cv. Major
- A 330 *Cotoneaster dielsianus* E.Pritz. (Kaunas, 1961)
- A 331 *Cotoneaster integerrimus* Medik. (Minsk, 1957)
- A 332 *Cotoneaster praecox* (Bois & P.Berthault) M.Vilm. ex Meun. (Stockholm, 1957)
- A 333 *Crataegus arnoldiana* Sarg. (Salaspils, 1996)
- 334 *Crataegus arnoldiana* Sarg. (Salaspils, 1996)
- A* 335 *Crataegus chlorosarca* Maxim. (*Insula Sachalin, Dolinsk*, 1961)
- 336 *Crataegus douglasii* Lindl. (Estonia, Järvselja, 1958)
- 337 *Crataegus dsungarica* Zabel ex Lange
- * 338 *Crataegus monogyna* Jacq. (Wien, 1975)
- * 339 *Crataegus rhipidophylla* Gand. (Salaspils, 1979)
- * 340 *Crataegus turkestanica* Pojark. (*Pamir-Alai occidentalis, Iskander-Kul*, 1962)
- * 341 *Crataegus ×viidumaegica* Cinovskis (*Estonia, Insula Saaremaa, Viidu*, 2006)
- A 342 *Malus fusca* (Raf.) C.K.Schneid. (Helsinki, 1996)
- 343 *Malus rockii* Rehder (Ottawa, 1959)
- * 344 *Malus sargentii* Rehder (Sapporo, 1980)
- A* 345 *Malus sieversii* (Ledeb.) M.Roem. (Tashkent, 1989)
- 346 *Malus yunnanensis* (Franch.) C.K.Schneid. var. *veitchii* Rehder (Hørsholm, 1991)
- 347 *Mespilus germanica* L. (Estonia, Luua, 1958)
- A 348 *Neillia sinensis* Oliv. (Moscow, 1961)
- 349 *Padus maackii* (Rupr.) Kom. (syn. *Prunus maackii* Rupr.) (Tartu, 1958)
- 350 *Physocarpus amurensis* (Maxim.) Maxim. (København, 1958)
- 351 *Physocarpus capitatus* (Pursh) Kuntze (Bruxelles, 1957)
- * 352 *Physocarpus opulifolius* (L.) Maxim. var. *intermedius* (Rydb.) B.L.Rob.
(Lisle, 1989)
- 353 *Physocarpus opulifolius* (L.) Maxim. cv. Luteus
- * 354 *Potentilla fruticosa* L. (*Estonia, Laulasmaa*, 1972)
- A 355 *Prunus cerasifera* Ehrh. (Budapest, 1999)
- 356 *Prunus spinosa* L. (Cogne, 2003)
- 357 *Prunus spinosa* L. subsp. *dasyphylla* (Schur) Domin (Estonia, Paldiski, 2005)
- 358 *Pyracantha coccinea* M.Roem. (Salaspils, 2007)
- 359 *Pyrus asiae-mediae* (Popov) Maleev (Tartu, 1966)

- 360 *Pyrus communis* L.
- 361 *Rhodotypos scandens* (Thunb.) Makino
- 362 *Rosa acicularis* Lindl. var. *nipponeensis* (Crép.) Koehne (Kyoto, 1982)
- 363 *Rosa agrestis* Savi (Ashgabat, 1957)
- 364 *Rosa arvensis* Huds.
- * 365 *Rosa blanda* Aiton (Philadelphia, 1983)
- 366 *Rosa caesia* Sm. (Stockholm, 1961)
- 367 *Rosa canina* L. cv. *Inermis* (Iaşı, 1984)
- 368 *Rosa carolina* L. var. *grandiflora* (Baker) Rehder (Glencoe, 1988)
- * 369 *Rosa corymbifera* Borkh. (*Tianschan occidentalis*, *Chimgan*, 1981)
- 370 *Rosa elegantula* Rolfe (Leiden, 1957)
- 371 *Rosa gallica* L.
- 372 *Rosa helenae* Rehder & E.H.Wilson (Ashgabat, 1957)
- 373 *Rosa hemsleyana* G.Täckh. (Stockholm, 1957)
- 374 *Rosa ×highdownensis* H.G.K.Hillier (Reading, 1971)
- 375 *Rosa jundzillii* Besser (Tübingen, 1985)
- 376 *Rosa koreana* Kom. (Umea, 2004)
- 377 *Rosa ×macrantha* hort. non N.H.F.Desp. (Kalmthout, 1961)
- * 378 *Rosa maximowicziana* Regel (*Rossia extremiorientalis*, *Shamora*, 1980)
- 379 *Rosa moyesii* Hemsl. & E.H.Wilson
- 380 *Rosa multiflora* Thunb. ex Murray (Koshigaya, 1983)
- 381 *Rosa multiflora* Thunb. ex Murray f. *roseiflora* (Focke) Rehder (Beijing, 1987)
- 382 *Rosa nitida* Willd. (Helsinki, 1992)
- 383 *Rosa nitidula* Besser
- 384 *Rosa obtusifolia* Desv. (Stockholm, 1963)
- 385 *Rosa palustris* Marshall (Philadelphia, 1983)
- 386 *Rosa rubiginosa* L.
- 387 *Rosa rugosa* Thunb. cv. *Alba* (Nijmegen, 1988)
- 388 *Rosa setipoda* Hemsl. & E.H.Wilson (Helsinki, 1960)
- 389 *Rosa stylosa* Desv. (Düsseldorf, 1996)
- * 390 *Rosa subcanina* (H.Christ) Dalla Torre & Sarnth. (Genova, 1982)
- 391 *Rosa tomentosa* Sm. (Liège, 1984)
- 392 *Rosa turcica* Rouy (Amsterdam, 1958)
- 393 *Rosa villosa* L.
- * 394 *Rosa vosagiaca* Desp. (Hamburg, 1986)
- 395 *Rubus idaeus* L. f. *chlorocarpus* Krause (Turku, 2000)
- 396 *Rubus occidentalis* L. (South Hadley, 1997)
- * 397 *Rubus odoratus* L. (Montréal, 1970)
- 398 *Sibiraea angustata* Rehder (Praha, 2005)
- * 399 *Sorbaria sorbifolia* (L.) A.Braun (*Rossia extremiorientalis*, *Svetlaya*, 1977)
- 400 *Sorbus alnifolia* (Siebold & Zucc.) K.Koch var. *submollis* Rehder (Nayoro, 1969)
- 401 *Sorbus* cv. *Apricot Queen* (Estonia, Tallinn, 2002)
- A* 402 *Sorbus chamaemespilus* (L.) Crantz (Salzburg, 1987)

A 403 ***Sorbus devoniensis*** E.F.Warb. cv. **Theophrasta** (Bristol, 2003)

404 ***Sorbus latifolia*** (Lam.) Pers.

405 ***Sorbus mougeotii*** Soy.-Will. (Stockholm, 1958)

406 ***Sorbus*** cv. **Nova** (Estonia, Tallinn, 2002)

* 407 ***Sorbus sambucifolia*** (Cham. & Schleidl.) M.Roem. (*Rossia extremiorientalis*,

Sovetskaya Gavan', 1967)

408 ***Spiraea ×margaritae*** Zabel (Genève, 1965)

Rubiaceae

+ 409 ***Psychotria punctata*** Vatke (Düsseldorf, 2001)

Rutaceae

410 ***Phellodendron amurense*** Rupr. (Estonia, Luua, 1957)

411 ***Phellodendron chinense*** C.K.Schneid. (Boyce, 1996)

412 ***Phellodendron lavallei*** Dode (Coimbra, 1966)

* 413 ***Phellodendron sachalinense*** (F.Schmidt) Sarg. (*Insula Sachalin*,

Yuzhno-Sakhalinsk, 1962)

A 414 ***Ptelea baldwinii*** Torr. & A.Gray (Leipzig, 2010)

415 ***Ptelea baldwinii*** Torr. & A.Gray (Leipzig, 2010)

416 ***Ptelea trifoliata*** L.

417 ***Ruta graveolens*** L.

Saxifragaceae

418 ***Saxifraga corymbosa*** Boiss. (Marburg, 1997)

* 419 ***Saxifraga crustata*** Vest (Graz, 2012)

* 420 ***Saxifraga paniculata*** Mill. (Cogne, 2001)

* 421 ***Saxifraga scardica*** Griseb. (Halle, 2009)

422 ***Saxifraga sempervivum*** K.Koch (Brno, 1993)

Schisandraceae

* 423 ***Schisandra chinensis*** (Turcz.) Baill. (*Rossia extremiorientalis*,

Okeanskaya, 1961)

Scrophulariaceae

* 424 ***Veronica gentianoides*** Vahl (Vácrátót, 2017)

Solanaceae

425 ***Capsicum annuum*** L. cv. Black Hungarian Longum Group

426 ***Capsicum annuum*** L. cv. Escamillo Grossum Group

427 ***Capsicum annuum*** L. cv. Gruzinskiy Nos Grossum Group

428 ***Capsicum annuum*** L. cv. Jalastar Longum Group

429 ***Capsicum annuum*** L. cv. Little Heart Grossum Group

430 ***Capsicum annuum*** L. cv. Padron Yellow Longum Group

431 ***Capsicum annuum*** L. cv. Plamja Drakonja Grossum Group

432 ***Capsicum annuum*** L. cv. Purple Tiger

- 433 *Capsicum annuum* L. cv. Sweet Bananas Banana Group
- 434 *Capsicum baccatum* L. cv. Aji Habanero
- 435 *Capsicum baccatum* L. cv. Aji Mango
- 436 *Capsicum baccatum* L. cv. Dong Xuan Market
- 437 *Capsicum chinense* Jacq. cv. Aji Dulce Puerto Rico
- 438 *Capsicum chinense* Jacq. cv. Biquinho Vermelho
- 439 *Capsicum chinense* Jacq. cv. Scotch Bonnet
- 440 *Capsicum pubescens* Ruiz & Pav. cv. Rocoto Manzano Red
- 441 *Lycium barbarum* L. (Beijing, 1957)
- * 442 *Lycium chinense* Mill. (Tsukuba, 1998)
- * 443 *Solanum dulcamara* L. (Estonia, Tallinn, 1999)

Staphyleaceae

- 444 *Staphylea bumalda* DC. (Sapporo, 1967)
- 445 *Staphylea pinnata* L.
- * 446 *Staphylea trifolia* L. (East Lansing, 1989)
- * 447 *Staphylea trifolia* L. var. *pauciflora* (Zabel) Rehder (Ottawa, 1967)

Styracaceae

- A 448 *Pterostyrax hispidus* Siebold & Zucc. (Estonia, Ellamaa, 2008)

Tiliaceae

- * 449 *Tilia americana* L. (Lisle, 1999)
- 450 *Tilia americana* L. cv. *Cyclophylla* (Salaspils, 1990)
- * 451 *Tilia cordata* Mill. (Estonia, Laheva, 2002)
- * 452 *Tilia cordata* Mill. (Estonia, Puhtu, 2000)
- 453 *Tilia japonica* (Miq.) Simonk. (Kyoto, 1974)
- 454 *Tilia mandshurica* Rupr. & Maxim. (Vladivostok, 1978)
- 455 *Tilia platyphyllos* Scop. cv. *Aurea*
- 456 *Tilia platyphyllos* Scop. subsp. *cordifolia* (Besser) C.K.Schneid. (Estonia, Harku, 1963)
- 457 *Tilia platyphyllos* Scop. cv. *Sõstralehine* (Estonia, Rohu, 2009)
- 458 *Tilia platyphyllos* Scop. cv. *Vitifolia* (Århus, 1972)
- * 459 *Tilia tomentosa* Moench (Moldavia, prope Chișinău, 1981)
- 460 *Tilia* cv. *Tortuosa* (Estonia, Tallinn, 2009)

Turneraceae

- + 461 *Turnera ulmifolia* L.

Ulmaceae

- 462 *Celtis tenuifolia* Nutt. (Tharandt, 2010)

Verbenaceae

- 463 *Callicarpa japonica* Thunb. (Greifswald, 2015)
- + 464 *Clerodendrum speciosissimum* Van Geert ex Morren (Dresden, 1997)

Vitaceae

- 465 ***Ampelopsis humulifolia*** Bunge (Estonia, Viljandi, 2009)
- * 466 ***Parthenocissus quinquefolia*** (L.) Planch. emend. Rehder (East Lansing, 2009)

Monocotyledoneae**Alliaceae**

- * 467 ***Allium alexeianum*** Regel (Salaspils, 1998)
- 468 ***Allium brevistylum*** S.Watson (Grenoble, 2011)
- 469 ***Allium christophii*** Trautv.
- * 470 ***Allium karataviense*** Regel **subsp. *henrikii*** Ruksans cv. Red Globe (Salaspils, 1998)
- 471 ***Allium schubertii*** Zucc.

Amaryllidaceae

- + 472 ***Zephyranthes robusta*** (Herb.) Baker

Anthericaceae

- + 473 ***Arthropodium cirratum*** (G.Forst.) R.Br.

Araceae

- + 474 ***Anthurium bakeri*** Hook.f. (Montréal, 1961)
- + 475 ***Anthurium crassinervium*** (Jacq.) Schott (St. Petersburg, 1977)
- + 476 ***Anthurium magnificum*** Lind.
- + 477 ***Anthurium scandens*** Engl. **subsp. *scandens***

Arecaceae

- + 478 ***Chamaerops humilis*** L.
- + 479 ***Serenoa repens*** (W.Bartram) Small (Bogor, 1997)

Asparagaceae

- +* 480 ***Eustrephus latifolius*** R.Br. (*Australiana*, 2003)
- + 481 ***Ruscus aculeatus*** L.

Asphodelaceae

- * 482 ***Asphodelus albus*** Mill. (Ljubljana, 2003)
- + 483 ***Dianella caerulea*** Sims (St.Petersburg, 1977)
- 484 ***Eremurus robustus*** (Regel) Regel (Estonia, Tamsa, 2007)
- * 485 ***Paradisea liliastrum*** (L.) Bertol. (Pavia, 2002)

Bromeliaceae

- + 486 ***Alchmea recurvata*** L.B.Sm. (München, 1961)
- + 487 ***Billbergia brasiliensis*** L.B. Sm. (Munster, 1983)
- + 488 ***Pitcairnia heterophylla*** (Lindl.) Beer (Zürich, 2014)
- + 489 ***Puya mirabilis*** (Mez) L.B.Sm. (Gent, 1976)

Commelinaceae

- + 490 *Tradescantia spathacea* Sw.

Costaceae

- + 491 *Costus speciosus* (J.König) Sm. (Köln, 1971)

Cyperaceae

- + 492 *Carex uncinata* (L.f.) Kük. cv. **Rubra**

Dracaenaceae

- + 493 *Cordyline fruticosa* (L.) A.Chev.

Hyacinthaceae

494 *Brimeura amethystina* (L.) Chouard cv. **Alba** (Essen, 1974)

495 *Camassia leichtlinii* (Baker) S.Watson subsp. **suksdorffii** (Greenm.) Gould (Oslo, 1993)

496 *Hyacinthoides hispanica* (Mill.) Rothm. cv. **Rosabella**

497 *Hyacinthoides hispanica* (Mill.) Rothm. cv. **Sky Blue**

Iridaceae

- + 498 *Iris foetidissima* L. (Samoëns, 2010)

- * 499 *Iris hookeri* Penny ex G.Don (AGS, 2011)

- + 500 *Libertia ixioides* (G.Forst) Spreng. (Christchurch, 2013)

Liliaceae

501 *Tulipa aucheriana* Baker (Wuppertal, 2006)

502 *Tulipa kaufmanniana* Regel (Tashkent, 1966)

503 *Tulipa tarda* Stapf (Latvia, Riga, 1977)

504 *Tulipa turkestanica* Regel (Riga, 1977)

Seminum collectores: Anu Birnbaum, Helle Dikker, Sille Janson, Anu Kaur, Krista Kirotar, Õnne Kuriks, Tiina Marjapuu, Jaan Mettik, Ly Mik, Lilian Veltermann, Mare Raidma, Tõnu Rähn, Ain Vammus, Ave Visnapuu, Marju Zirk

II Semina et sporae plantarum spontanearum in diversis regionibus Estoniae collecta

PTERIDOPHYTA

Dryopteridaceae

- 505 ***Dryopteris filix-mas*** (L.) Schott – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio-Pinetum*), Vilsandi Island, W Estonia 58.381412, 21.835910 OA, TR

Polypodiaceae

- 506 ***Polypodium vulgare*** L. – gray dune (*Ammophiletum arenariae*), Harilaid, Saaremaa Island, W Estonia 58.488273, 21.844721 08.09.2022 OA

SPERMATOPHYTA

GYMNOSPERMAE

Cupressaceae

- 507 ***Juniperus communis*** L. – alvar *Juniperus communis* shrubland, Vesiloo Island, W Estonia 58.398932, 21.833212 07.09.2022 SJ
- 508 ***Juniperus communis*** L. – alvar *Juniperus communis* shrubland, Vilsandi Island, W Estonia 58.385112, 21.827570 07.09.2022 OA, TR

ANGIOSPERMAE

Dicotyledoneae

Apiaceae

- 509 ***Aegopodium podagraria*** L. – railway dam, Pelgulinn, Tallinn, N Estonia 59.443455, 24.717593 26.08.2022 MR
- 510 ***Anthriscus sylvestris*** (L.) Hoffm. – wasteland, Mäeküla, Tallinn, N Estonia 59.397191, 24.609999 12.07.2022 TR
- 511 ***Conium maculatum*** L. – street edge, Kalaranna, Tallinn, N Estonia 59.448459, 24.744891 25.08.2022 MR
- 512 ***Heracleum sibiricum*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.449382, 24.828973 26.07.2022 OA
- 513 ***Pastinaca sativa*** L. subsp. ***sylvestris*** (Mill.) Rouy & E.G.Camus – railway dam, Pelgulinn, Tallinn, N Estonia 59.446781, 24.712731 26.08.2022 MR
- 514 ***Seseli libanotis*** (L.) W.D.J.Koch – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.449212, 24.827920 13.09.2022 OA, TR
- 515 ***Torilis japonica*** (Houtt.) DC. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio–Pinetum*), Vilsandi Island, W Estonia 58.386640, 21.847801 07.09.2022 OA, EH, RK, PK, MP

Asteraceae

- 516 ***Arctium lappa*** L. – field edge, Anelema, Pärnu County, SW Estonia 58.635383, 24.566828 12.11.2022 SJ
- 517 ***Cirsium acaule*** (L.) Scop. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Aandu, Rapla County, NW Estonia 59.165656, 24.743850 12.09.2022 UL
- 518 ***Crepis biennis*** L. – wasteland, Karjamaa, Tallinn, N Estonia 59.452887, 24.717934 26.07.2022 MR
- 519 ***Hieracium umbellatum*** L. – pebbly seashore, Vilsandi Island, W Estonia 58.387750, 21.817931 07.09.2022 OA, TR
- 520 ***Hypochaeris maculata*** L. (syn. *Achyrophorus maculatus* (L.) Scop.) – dry boreal *Vaccinium vitis-idaea* pine (*Pinus sylvestris*) forest (*Vaccinio vitis-idaeo–Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.467631, 24.865056 22.07.2022 MR
- 521 ***Lapsana communis*** L. – street edge, Kloostrimetsa, Tallinn, N Estonia 59.467648, 24.885410 16.08.2022 AK, MR
- 522 ***Leontodon autumnalis*** L. – wasteland, Karjamaa, Tallinn, N Estonia 59.450465, 24.716853 25.08.2022 MR
- 523 ***Leontodon hispidus*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Rapla County, NW Estonia 59.162016, 24.747061 01.08.2022 UL
- 524 ***Matricaria discoidea*** DC. (syn. *Chamomilla suaveolens* (Pursh) Rydb.) – wasteland, Mäeküla, Tallinn, N Estonia 59.397973, 24.609794 12.07.2022 TR
- 525 ***Pilosella officinalis*** Vaill. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.466800, 24.879051 28.06.2022 MR
- 526 ***Tragopogon pratensis*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Aandu, Rapla County, NW Estonia 59.159796, 24.748772 18.07.2022 UL
- 527 ***Tripleurospermum inodorum*** (L.) Sch.Bip. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.467350, 24.883854 29.07.2022 MR

Balsaminaceae

- 528 ***Impatiens parviflora*** DC. – naturalized, street edge, Kloostrimetsa, Tallinn, N Estonia 59.468396, 24.885313 16.08.2022 MR

Boraginaceae

- 529 ***Lithospermum officinale*** L. – roadside, Aandu, Rapla County, NW Estonia 59.164177, 24.747443 27.11.2022 UL

Brassicaceae

- 530 ***Arabis hirsuta*** (L.) Scop. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397911, 24.610135 12.07.2022 OA, TR
- 531 ***Barbarea vulgaris*** R.Br. **subsp. *arcuata*** (Opiz ex J.Presl & C.Presl) M.Lohr – wasteland, Mäeküla, Tallinn, N Estonia 59.397750, 24.609857 12.07.2022 OA, TR
- 532 ***Bunias orientalis*** L. – naturalized, wasteland, Mäeküla, Tallinn, N Estonia 59.397189, 24.609942 12.07.2022 OA, TR
- 533 ***Crambe maritima*** L. – pebbly seashore, Vesiloo säär, W Estonia 58.393270, 21.843550 07.09.2022 EH, PK, MP

- 534 ***Descurainia sophia*** (L.) Webb ex Prantl – wasteland, Kloostrimetsa, Tallinn, N Estonia 59.468699, 24.888694 04.08.2022 OA
- 535 ***Erophila verna*** (L.) DC. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.468100, 24.880565 25.05.2022 MR
- 536 ***Erucastrum gallicum*** (Willd.) O.E.Schulz – naturalized, wasteland, Mäeküla, Tallinn, N Estonia 59.397668, 24.609120 12.07.2022 OA, TR
- 537 ***Lepidium latifolium*** L. – pebbly seashore, Riimirahu Island, W Estonia 58.390204, 21.845040 07.09.2022 OA, RK, PK
- 538 ***Lepidium ruderale*** L. – wasteland, Paljassaare, Tallinn, N Estonia 59.471628, 24.721834 01.07.2022 MR
- 539 ***Sinapis arvensis*** L. – street edge, Kalaranna, Tallinn, N Estonia 59.448661, 24.744318 25.08.2022 MR
- 540 ***Sisymbrium altissimum*** L. – naturalized, wasteland, Mäeküla, Tallinn, N Estonia 59.397714, 24.609274 12.07.2022 OA, TR
- 541 ***Sisymbrium loeselii*** L. – naturalized, street edge, Kalaranna, Tallinn, N Estonia 59.44866, 24.744318 25.08.2022 MR
- 542 ***Thlaspi arvense*** L. – wasteland, Kloostrimetsa, Tallinn, N Estonia 59.468421, 24.888394 04.08.2022 MR, MS, IK, OK

Caryophyllaceae

- 543 ***Arenaria serpyllifolia*** L. – wasteland, Mäeküla, Tallinn, N Estonia 59.397774, 24.609473 12.07.2022 TR
- 544 ***Silene dioica*** (L.) Clairv. – street edge, Kloostrimetsa, Tallinn, 59.467837, 24.885468 N Estonia 16.08.2022 MR
- 545 ***Silene nutans*** L. – dry boreal heath grassland (*Galio veri–Thymetum*), Paljassaare, Tallinn, N Estonia 59.474505, 24.715891 01.07.2022 RK

Clusiaceae

- 546 ***Hypericum hirsutum*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Vilsandi Island, W Estonia 58.381432, 21.851613 07.09.2022 RK

Cucurbitaceae

- 547 ***Bryonia alba*** L. – naturalized, on the fence, Karjamaa, Tallinn, N Estonia 59.449302, 24.712668 23.10.2022 MR

Dipsacaceae

- 548 ***Scabiosa columbaria*** L. – lichen (*Cladina*) pine (*Pinus sylvestris*) forest (*Cladino-Pinetum*), Harilaid, Saaremaa Island, W Estonia 58.493060, 21.849442 08.09.2022 EH, TR

Empetraceae

- 549 ***Empetrum nigrum*** L. – lichen (*Cladina*) pine (*Pinus sylvestris*) forest (*Cladino-Pinetum*), Peraküla, Lääne County, W Estonia 59.223810, 23.608470 21.09.2022 OA

Ericaceae

- 550 ***Vaccinium myrtillus*** L. – fresh boreal *Vaccinium myrtillus* pine (*Pinus sylvestris*) forest (*Vaccinio-Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.469083, 24.856347 02.08.2022 MR, IK

Fabaceae

- 551 ***Lathyrus maritimus*** (L.) Bigelow – white dune (*Honckenyo-Leymetum*), Valkla, Harju County, N Estonia 59.493718, 25.343491 16.10.2022 SJ
- 552 ***Lathyrus maritimus*** (L.) Bigelow – gray dune (*Ammophiletum arenariae*), Harilaid, Saaremaa Island, W Estonia 58.489850, 21.857570 08.09.2022 OA, EH, PK, TR
- 553 ***Lotus corniculatus*** L. – lawn, Toompark, Vanalinna, Tallinn, N Estonia 59.437607, 24.734565 15.08.2022 OA, EP
- 554 ***Medicago lupulina*** L. – wasteland, Mäeküla, Tallinn, N Estonia 59.397807, 24.609491 12.07.2022 OA, TR
- 555 ***Medicago sativa*** L. – railway dam, Pelgulinn, Tallinn, N Estonia 59.446784, 24.712783 26.08.2022 MR
- 556 ***Vicia cracca*** L. – street edge, Kloostrimetsa, Tallinn, N Estonia 59.467649, 24.885410 AK, MR
- 557 ***Vicia hirsuta*** (L.) S.F.Gray – roadside, Paljassaare, Tallinn, N Estonia 59.483158, 24.709409 01.07.2022 OA, PK, MR

Geraniaceae

- 558 ***Geranium robertianum*** L. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.468161, 24.881166 18.08.2022 MR

Lamiaceae

- 559 ***Stachys sylvatica*** L. – fresh boreo-nemoral *Hepatica* birch (*Betula pendula*) and spruce (*Picea abies*) mixed forest (*Hepatico-Betulo-Piceetum*), Aandu, Rapla County, NW Estonia 59.15869, 24.73873 26.09.2022 UL

Papaveraceae

- 560 ***Chelidonium majus*** L. – wasteland, Kloostrimetsa, Tallinn, N Estonia 59.469690, 24.87732929.06.2022 MR, IK

Plantaginaceae

- 561 ***Plantago maritima*** L. – pebbly seashore, Vilsandi Island, W Estonia 58.387731, 21.817963 07.09.2022 TR
- 562 ***Plantago media*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.448541, 24.827350 26.07.2022 OA

Polygonaceae

- 563 ***Fallopia dumetorum*** (L.) Holub. (syn. *Polygonum dumetorum* L.) – arboretum, on the fence, Kloostrimetsa, Tallinn, N Estonia 59.467741, 24.885383
31.08.2022 MR
- 564 ***Rumex confertus*** Willd. – naturalized, railway dam, Pelgulinn, Tallinn, N Estonia 59.446828, 24.712674 26.08.2022 MR

Primulaceae

- 565 ***Primula veris*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Vilsandi Island, W Estonia 58.381450, 21.851550 07.09.2022 EH, RK, PK
- 566 ***Primula veris*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.448171, 24.825041 27.07.2022 OA
- 567 ***Primula veris*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397711, 24.609796 12.07.2022 TR

Ranunculaceae

- 568 ***Actaea spicata*** L. – street edge, Kloostrimetsa, Tallinn, N Estonia 59.467669, 24.885529 16.08.2022 AK
- 569 ***Anemone nemorosa*** L. – dry boreal *Vaccinium vitis-idaea* oak–pine (*Quercus robur–Pinus sylvestris*) forest (*Vaccinio vitis-idaeo–Querco–Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.469498, 24.881199 17.06.2022 MR, IK
- 570 ***Anemone ranunculoides*** L. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.470784, 24.880687 17.06.2022 MR, IK
- 571 ***Pulsatilla pratensis*** (L.) Mill. – dry boreal grassland (*Deschampsietum flexuosae*), Kloostrimetsa, Tallinn, N Estonia 59.470370, 24.880570 27.06.2022 MR

Rhamnaceae

- 572 ***Rhamnus cathartica*** L. – alvar *Juniperus communis* shrubland, Vesiloo Island, W Estonia 58.398400, 21.833701 07.09.2022 OA

Rosaceae

- 573 ***Agrimonia eupatoria*** L. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio–Pinetum*), Vilsandi Island, W Estonia 58.386600, 21.848002 07.09.2022 OA, RK, PK
- 574 ***Agrimonia eupatoria*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Aandu, Rapla County, NW Estonia 59.159232, 24.748960 20.11.2022 UL
- 575 ***Cotoneaster rannensis*** B.Hylmö & J.Fryer – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.450480, 24.829502 13.09.2022 OA, TR
- 576 ***Cotoneaster scandinavicus*** B.Hylmö – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Vilsandi Island, W Estonia 58.388534, 21.845081 07.09.2022 PK

- 577 ***Fragaria vesca*** L. – dry boreal *Vaccinium vitis-idaea* pine (*Pinus sylvestris*) forest (*Vaccinio vitis-idaeo–Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.471045, 24.877804 04.07.2022 MR
- 578 ***Fragaria viridis*** Weston – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397711, 24.609796 12.07.2022 OA, TR
- 579 ***Geum rivale*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397381, 24.610031 12.07.2022 OA, TR
- 580 ***Geum urbanum*** L. – street edge, Kloostrimetsa, Tallinn, N Estonia 59.467613, 24.885497 20.07.2022 AK, MR
- 581 ***Padus avium*** Mill. (syn. *Prunus padus* L.) – street edge, Kose, Tallinn, N Estonia 59.461955, 24.886725 20.07.2022 MR, IK
- 582 ***Rosa coriifolia*** Fr. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio–Pinetum*), Vilsandi Island, W Estonia 58.381470, 21.835952 07.09.2022 OA, TR
- 583 ***Rosa majalis*** Herrm. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio–Pinetum*), Aandu, Rapla County, NW Estonia 59.160390, 24.751662 20.11.2022 UL
- 584 ***Rosa mollis*** Sm. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio–Pinetum*), Vilsandi Island, W Estonia 58.380730, 21.853032 07.09.2022 OA
- 585 ***Rosa rugosa*** Thunb. – naturalized, gray dune (*Galio veri–Thymetum*), Valkla, Harju County, N Estonia 59.493806, 25.344233 16.10.2022 SJ
- 586 ***Rosa subcanina*** (H.Christ) Dalla Torre & Sarnth. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.449312, 24.827881 13.09.2022 OA

Rubiaceae

- 587 ***Galium aparine*** L. – arboretum, on the fence, Kloostrimetsa, Tallinn, N Estonia 59.468025, 24.885319 16.08.2022 AK, MR

Scrophulariaceae

- 588 ***Rhinanthus angustifolius*** C.C.Gmel. s.l. – arboretum, Kloostrimetsa, Tallinn, N Estonia 59.467353, 24.8838540 19.07.2022 MR

Monocotyledoneae

Alliaceae

- 589 ***Allium oleraceum*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Paevälja, Tallinn, N Estonia 59.448573, 24.827423 26.07.2022 OA
- 590 ***Allium oleraceum*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Vilsandi Island, W Estonia 58.381602, 21.851470 21.09.2022 RK
- 591 ***Allium schoenoprasum*** L. – alvar *Juniperus communis* shrubland, Vilsandi Island, W Estonia 58.385832, 21.824180 07.09.2022 OA, TR

Convallariaceae

- 592 ***Convallaria majalis*** L. – dry boreal *Vaccinium vitis-idaea* oak–pine (*Quercus robur*–*Pinus sylvestris*) forest (*Vaccinio vitis-idaeo*–*Querco-Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.470607, 24.880730 19.09.2022 MR, IK
- 593 ***Polygonatum multiflorum*** (L.) All. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio-Pinetum*), Vilsandi Island, W Estonia 58.381082, 21.842280 07.09.2022 TR
- 594 ***Polygonatum odoratum*** (Mill.) Druce – dry boreal *Vaccinium vitis-idaea* pine (*Pinus sylvestris*) forest (*Vaccinio vitis-idaeo*–*Pinetum*), Kloostrimetsa, Tallinn, N Estonia 59.467464, 24.866102 06.09.2022 MR, IK

Cyperaceae

- 595 ***Schoenus ferrugineus*** L. – springfen (*Juncetum subnodulosae*), Viidu, Saaremaa Island, W Estonia 58.296254, 22.086542 06.09.2022 OA, TR

Poaceae

- 596 ***Ammophila arenaria*** (L.) Link – white dune (*Ammophiletum arenariae*), Harilaid, Saaremaa Island, W Estonia 58.489521, 21.858473 08.09.2022 OA, TR
- 597 ***Ammophila arenaria*** (L.) Link – white dune (*Ammophiletum arenariae*), Peraküla, Lääne County, W Estonia 59.225441, 23.609492 21.09.2022 OA
- 598 ***Arrhenatherum elatius*** (L.) P.Beauv. ex J.Presl. & C.Presl. – dry alvar grassland (*Trifolio montani*–*Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397425, 24.609946 12.07.2922 OA, TR
- 599 ***Arrhenatherum elatius*** (L.) P.Beauv. ex J.Presl. & C.Presl. – abandoned field, Aandu, Rapla County, NW Estonia 59.155249, 24.742114 24.07.2022 UL
- 600 ***Brachypodium pinnatum*** (L.) P.Beauv. – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio-Pinetum*), Vilsandi Island, W Estonia 58.381174, 21.841813 07.09.2022 OA, TR
- 601 ***Briza media*** L. – dry alvar grassland (*Trifolio montani*–*Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397906, 24.610255 12.07.2022 OA, TR
- 602 ***Bromus inermis*** Leyss. – naturalized, dry alvar grassland (*Trifolio montani*–*Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397442, 24.609258 12.07.2022 OA, TR
- 603 ***Calamagrostis arundinacea*** (L.) Roth – fresh alvar *Calamagrostis* pine (*Pinus sylvestris*) forest (*Calamagrostio-Pinetum*), Aandu, Rapla County, NW Estonia 59.159416, 24.746288 12.09.2022 UL
- 604 ***Dactylis glomerata*** L. – dry alvar grassland (*Trifolio montani*–*Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397388, 24.609429 12.07.2022 OA
- 605 ***Festuca arundinacea*** Schreb. – railway dam, Pelgulinn, Tallinn, N Estonia 59.443611, 24.717342 26.08.2022 MR
- 606 ***Helictotrichon pratense*** (L.) Pilg. – dry alvar grassland (*Trifolio montani*–*Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397777, 24.609763 12.08.2022 TR

- 607 ***Helictotrichon pratense*** (L.) Pilg. – dry boreo-nemoral grassland (*Agrostio capillaris–Anthoxanthetum*), Paljassaare, Tallinn, N Estonia 59.474781, 24.715475 01.07.2022 OA, PK
- 608 ***Leymus arenarius*** (L.) Hochst. – white dune (*Ammophiletum arenariae*), Peraküla, Lääne County, W Estonia 59.225384, 23.609402 21.09.2022 OA
- 609 ***Phalaris arundinacea*** L. – abandoned cultivated hayland, Aandu, Rapla County, NW Estonia 59.162352, 24.739024 24.07.2022 UL
- 610 ***Poa trivialis*** L. – dry alvar grassland (*Trifolio montani–Filipenduletum vulgaris*), Mäeküla, Tallinn, N Estonia 59.397224, 24.609925 12.07.2022 OA, TR

III Semina plantarum in diversis regionibus Estoniae cultarum

ANGIOSPERMAE

Dicotyledoneae

Rosaceae

- 611 ***Crataegus monogyna*** Jacq. – garden, Pelgulinn, Tallinn, N Estonia 59.446811, 24.712233 07.10.2022 MR
- 612 ***Crataegus russanowii*** Cinovskis – street edge, Pelgulinn, Tallinn, N Estonia 59.446137, 24.713070 07.10.2022 MR
- 613 ***Crataegus russanowii*** Cinovskis f. ***rubella*** Cinovskis – Falgi park, Tallinn, N Estonia 59.432863, 24.734303 23.11.2022 OA
- 614 ***Crataegus ×schneideri*** Cinovskis – Falgi park, Tallinn, N Estonia 59.433210, 24.732670 23.11.2022 OA
- 615 ***Crataegus songarica*** K.Koch – Tallinn Zoo, Tallinn, N Estonia 59.421920, 24.660770 10.09.2022 OA
- 616 ***Rosa villosa*** L. (*Rosa pomifera* Herrm.) – Pidula manor park, Saaremaa Island, W Estonia 58.420446, 22.152038 08.09.2022 OA

Seminum collectores: Anu Kaur (AK), Evelyn Hiielo (EH), Eliko Petser (EP), Irina Korniienko (IK), Merlyn Pajur (MP), Mare Raidma (MR), Mari Sild (MS), Olev Abner (OA), Oleksandra Klotka (OK), Piret Kümmel (PK), Rein Kalamees (RK), Sille Janson (SJ), Tõnu Rähn (TR), Urmas Laansoo (UL)

Urve Sinijärv
Horti Director

Olev Abner
Custos

Heli Russak
Seminum Curator

KAUR Weather Records 2022
Tallinn - Harku

The highest air temperature: 32,9 °C (August 19)

The lowest air temperature: -17,1 °C (January 11)

Annual rainfall total: 514

Average Monthly Temperature and Rainfall

Month	Ground (°C)	Air Average (°C)	Air Min (°C)	Air Max (°C)	Rainfall (mm)
Jan	-3,2	-1,6	-17,1	5,3	77,8
Feb	-1,8	-0,4	-7,6	5,1	57,1
Mar	0,6	1,0	-9,2	12,7	3,7
Apr	5,5	3,4	-8,1	13,7	36,4
May	13,8	9,5	-1,5	22,3	40,2
Jun	23,2	16,9	5,5	32,3	26,0
Jul	22,6	18,0	8,1	31,8	63,4
Aug	24,2	19,9	7,8	32,9	12,3
Sep	12,0	10,2	1,2	18,1	47,4
Oct	8,0	8,8	-3,0	15,0	31,6
Nov	2,4	2,8	-8,3	13,7	51,9
Dec	-3,7	-2,9	-12,1	5,8	66,5

