

Supplementary material of

Jukka Salonen, Terho Hyvönen and Heikki Jalli. Composition of weed flora in spring cereals in Finland – a fourth survey. *Agricultural and Food Science* 20: 245-261.

Appendix 1. Frequency (% in parentheses, in descending order in each region) of additional weed species observed in survey fields (N=595) by region.

Jokioinen (43 fields)

POASS (9), SENVU (7), LTHPR (5), TUSFA (5), AEOPO (2), CERAR (2), DECCA (2), HORVU (2), MEDAB (2), RANSS (2), SONOL (2), STAPA (2), TRZAS (2), URTDI (2), VERAR (2)

Lammi (50 fields)

STAPA (20), HORVU (10), PTLNO (8), BIDTR (6), CENSY (6), EPIMO (6), STEGR (6), AVEFA (4), AVESA (4), CRYCA (4), LEBAU (4), LTHPR (4), PHRCO (4), POLHY (4), PTLAN (4), TUSFA (4), VERAG (4), ACHPT (2), AEOPO (2), AGSTE (2), ANRSY (2), ARFTO (2), FESPR (2), FIIUL (2), RUMAC (2), RUMLO (2), SCRAN (2), SENVU (2), TRZAS (2), URTDI (2), VIOPA (2)

Nauvo/Korppoo (28 fields)

BIDTR (18), EPHHE (14), AGSTE (11), SENVU (11), SOLTU (11), EPIMO (7), SONOL (7), VERAR (7), VICHI (7), ALCVU (4), ANRSY (4), ARFTO (4), AVEFA (4), CRUCR (4), HYPPE (4), LEBAU (4), LIUUT (4), LTHVE (4), POATR (4), POLSS (4), PTLPA (4), RAPRA (4), STAPA (4), STEGR (4), VERAG (4), VERCH (4)

Tammela (40 fields)

POLHY (15), POASS (10), TUSFA (10), BIDTR (8), LTHPR (8), POATR (8), STAPA (8), EPIMO (5), POLSS (5), PTLAN (5), TRFME (5), ANRSY (3), ARISE (3), AVESA (3), CLMSS (3), CMPPA (3), DECCA (3), EPHHE (3), IUNBB (3), PIEAB (3), POLPE (3), PTEAQ (3), PTLNO (3), RANAC (3), RAPRA (3), RUBID (3), RUMAA (3), SENVU (3), SOLTU (3), URTDI (3), VERCH (3), VIOPA (3), VIORI (3)

Iitti (35 fields)

LTHPR (14), POLHY (14), TRFPR (14), VICHI (11), PHRCO (9), POATR (9), BARVU (6), CENSY (6), BIDTR (3), BRSRA (3), CERAR (3), CHYLE

(3), GAETE (3), LINVU (3), POLPE (3), PRUVU (3), RANAC (3), RAPRA (3), RUBID (3), RUMAC (3), SONOL (3), STAPA (3), STEGR (3), URTDI (3), VERAG (3), VERCH (3), VIOPA (3)

Kitee (20 fields)

URTDI (25), BIDTR (20), FESSS (20), GEURI (20), RANAC (20), RUMLO (20), TUSFA (20), ACHPT (15), HORVU (15), RUMAC (15), ALCSS (10), ANKSY (10), SCRAN (10), STAPA (10), VERAG (10), VIOTR (10), AGSTE (5), ANRSY (5), AVESA (5), CENSY (5), DACGL (5), EPIPA (5), FESPR (5), HIEPI (5), IUNCO (5), LINVU (5), MENAR (5), MNTFA (5), PIUSI (5), POATR (5), POLSS (5), VERAR (5), VERCH (5), VIOPA (5)

Laukaa/Toivakka (35 fields)

POATR (29), STAPA (14), URTUR (14), CRYCA (11), TUSFA (11), ALOPR (9), RAPRA (9), BARVU (6), EPIMO (6), POLSS (6), POLVI (6), SENVU (6), ANRSY (6), AVEFA (3), BIDTR (3), DECCA (3), GAETE (3), LEBAU (3), LTHPR (3), MYSMI (3), POASS (3), PTLNO (3), RORIS (3), RORSY (3), RUMAC (3), RUMLO (3), SAXSS (3), URTDI (3), VERAR (3), VERCH (3)

Vieremä (26 fields)

EPIAC (23), HORVU (19), BIDTR (15), CHYLE (15), RANAC (15), VERAR (15), MNTFA (8), RUMLO (8), SCRAN (8), AGSTE (4), ANRSY (4), ARBTH (4), AVESA (4), EPISS (4), GALPA (4), GEURI (4), IUNBB (4), LTHPR (4), PIUSI (4), POATR (4), POLSS (4), RORSY (4), RUBID (4), TUSFA (4), URTDI (4), VERAG (4), VERCH (4)

Laihia (41 fields)

POATR (7), AVESA (5), CIRHE (5), FESPR (5), POLSS (5), VERAG (5), ANKSY (2), DECCA (2), LEBAU (2), RUMLO (2), STEGR (2), TUSFA (2), VERCH (2)

Laitila (48 fields)

POLHY (19), ANRSY (6), FIIUL (6), POLPE (6), AVEFA (4), EQUSY (4), GEURI (4), LEBAU (4), TUSFA (4), BIDTR (2), DECFL (2), EPIMO (2), FESOV (2), FESPR (2), HYPPE (2), SENVU (2)

Lieto/Paimio (66 fields)

LTHPR (12), PIUSI (8), POASS (8), POATR (6), BIDTR (5), PIEAB (5), BRSNN (3), CRYCA (3), EPHHE (3), POLHY (3), POLSS (3), SENVU (3), STAPA (3), TUSFA (3), CIRHE (2), FIIUL (2), LIUUT (2), LOLPE (2), RANAC (2), RAPRA (2)

Nurmijärvi (59 fields)

EPIMO (15), LEBAU (14), LTHPR (14), LOLPE (10), POLHY (10), TUSFA (10), URTDI (10), STAPA (8), VERAG (8), EQUSY (7), AEOP (5), ALOPR (5), DECCA (5), RUMLO (5), SENVU (5), ANKSY (3), AVEFA (3), BIDTR (3), EPISS (3), GALPA (3), HORVU (3), LINVU (3), SCRAN (3), STEGR (3), ACHPT (2), ALCVU (2), ANRSY (2), CENJA (2), EPIHI (2), FESPR (2), PLALA (2), POATR (2), POLPE (2), PTLNO (2), RAPRA (2), RUBID (2), RUMAC (2), SECCE (2), THCFL (2), TRZAS (2), VERAR (2), VERPE (2), VIOCA (2)

Imatra/Ruokolahti (23 fields)

POASS (26), EPIMO (22), TUSFA (22), CHEPO (13), LTHPR (9), POATR (9), POLHY (9), PTLAN (9), RAPRA (9), RORSY (9), STAPA (9), ACHPT (4), AGSTE (4), BARVU (4), CENSY (4), EROCI (4), HORVU (4), LEBAU (4), LOLPE (4), PIBSA (4), PRUVU (4), PTLNO (4), RUMAA (4), RUMAC (4), SCRAN (4), SECCE (4), TRFME (4), TRZAS (4), URTDI (4), VIOPA (4), VIORI (4)

Mikkeli (25 fields)

TUSFA (32), RUBID (16), URTDI (16), BIDTR (8), EPIMO (8), LYSVU (8), POASS (8), RUMAC (8), STAPA (8), TRZAS (8), AGSTE (4), AVESA (4), CRUCR (4), DECCA (4), EPIAC (4), FESPR (4), GAGOR (4), HORVU (4), LOLPE (4), LTHPR (4), RANAC (4), RAPRA (4), RUMCR (4), RUMLO (4), SOLTU (4), VERAG (4), VERAR (4)

Kihniö/Parkano (26 fields)

AGSTE (19), RUMAC (19), TUSFA (19), RUMLO (15), EQUSY (8), HORVU (8), ACHPT (4), AVESA (4), BIDTR (4), CHYLE (4), CIRPA (4), EPIAC (4), GAETE (4), LEBAU (4), LTHPR (4), PIBSA (4), RAPRA (4), SAXSS (4), SCRAN (4), SECCE (4), STEGR (4)

Nivala (30 fields)

LEBAU (13), URTDI (13), LOLPE (10), RUMLO (10), BARVU (7), FESPR (7), POLPE (7), SECCE (7), ACHPT (3), ANRSY (3), CENSY (3), EQUSY (3), HORVU (3), LTHPR (3), POLHY (3), PTLNO (3), RANAC (3), RAPRA (3), SONOL (3), TUSFA (3)

Key of EPPO code abbreviations:

ACHMI *Achillea millefolium*, ACHPT *Achillea ptarmica*, AEOP *Aegopodium podagraria*, AGRRE *Elymus repens*, AGSTE *Agrostis capillaris*, ALCSS *Alchemilla* spp., ALCVU *Alchemilla vulgaris*, ALOAE *Alopecurus aequalis*, ALOGE *Alopecurus geniculatus*, ALOPR *Alopecurus pratensis*, ANKSY *Angelica sylvestris*, ANRSY *Anthriscus sylvestris (sylvestris)*, ARISE *Arenaria serpyllifolia*, ARBTH *Arabidopsis thaliana*, ARTFO *Arctium tomentosum*, ARTVU *Artemisia vulgaris*, ATXPA *Atriplex patula*, AVEFA *Avena fatua*, AVESA *Avena sativa*, BARVU *Barbarea vulgaris*, BIDTR *Bidens radiata*, BRSNN *Brassica napus* L. var. *oleifera*, BRSRA *Brassica rapa*, BRSRO *Brassica rapa* L. ssp. *oleifera*, CAPBP *Capsella bursa-pastoris*, CENCY *Centaurea cyanus*, CERAR *Cerastium arvense*, CERFO *Cerastium fontanum*, CHAAN *Epilobium angustifolium*, CHEAL *Chenopodium album*, CHEPO *Chenopodium polyspermum*, CHYLE *Leucanthemum vulgare*, CIRAR *Cirsium arvense*, CIRHE *Cirsium helenioides*, CIRPA *Cirsium palustre*, CIRVU *Cirsium vulgare*, CLMSS *Calamagrostis* spp., CRUCR *Carduus crispus*, CRYCA *Carum carvi*, DACGL *Dagtylis glomerata*, DECCA *Deschampsia cespitosa*, DECFL *Deschampsia flexuosa*, EPHHE *Euphorbia helioscopia*, EPIAC *Epilobium adenocaulon*, EPIHI *Epilobium hirsutum*, EPIMO

Epilobium montanum, EPIPA *Epilobium palustre*, EPISS *Epilobium* spp., EQUAR *Equisetum arvense*, EQUSS *Equisetum* spp., EQUSY *Equisetum sylvaticum*, ERYCH *Erysimum cheiranthoides*, FAGES *Fagopyrum esculentum*, FESPR *Festuca pratensis*, FESSS *Festuca* spp., FIIUL *Filipendula ulmaria*, FUMOF *Fumaria officinalis*, GAEBI *Galeopsis bifida*, GAESP *Galeopsis speciosa*, GAESS *Galeopsis* spp., GAETE *Galeopsis tetrahit*, GAGOR *Galega orientalis*, GALPA *Galium palustre*, GALSP *Galium spurium*, GALSS *Galium* spp., GALUL *Galium uliginosum*, GEURI *Geum rivale*, GNAUL *Gnaphalium uliginosum*, HIEPI *Hieracium pilosella*, HORVU *Hordeum vulgare*, spring barley, IUNBB *Juncus bulbosus*, IUNBU *Juncus bufonius*, IUNCO *Juncus compressus*, LAMAL *Lamium album*, LAMIN *Lamium incisum*, LAMPU *Lamium purpureum*, LAMSS *Lamium* spp., LAPCO *Lapsana communis*, LEBAU *Leontodon autumnalis*, LINVU *Linaria vulgaris*, LIUUT *Linum usitatissimum*, LTHPR *Lathyrus pratensis*, LTHVE *Lathyrus vernus*, LYSVU *Lysimachia vulgaris*, MATIN *Tripleurospermum inodorum*, MATMT *Matricaria matricarioides*, MATSS *Matricaria* spp., MEDSS *Medicago* spp., MENAR *Mentha arvensis*, MNTFA *Montia fontana*, MYOAR *Myosotis arvensis*, MYSMI *Myosurus minimus*, PHLPR *Phleum pratense*, PHRCO *Phragmites australis*, PIBSA *Pisum sativum* L. var. *arvense*, PIEAB *Picea abies*, PIUSI *Pinus silvestris* (= *sylvestris*), PLALA *Plantago lanceolata*, PLAMA *Plantago major*, POAAN *Poa annua*, POAPR *Poa pratensis*, POASS *Poa* spp., POATR *Poa trivialis*, POLAV *Polygonum aviculare*, POLCO *Fallopia convolvulus*, POLHY *Persicaria hydropiper*, POLLA *Persicaria lapathifolium*, POLPE *Persicaria maculosa*, POLSS *Polygonum* spp., POLVI *Bistorta vivipara*, PRUVU *Prunella vulgaris*, PTEAQ *Pteridium aquilinum*, PTLAN *Potentilla anserina*, PTLNO *Potentilla norvegica*, PTLPA *Potentilla palustris*, RANAC *Ranunculus acris*, RANRE *Ranunculus repens*, RANSS *Ranunculus* spp., RAPRA *Raphanus raphanistrum*, RORIS *Rorippa palustris*, RUBID *Rubus idaeus*, RUMAA *Rumex acetosella*, RUMAC *Rumex acetosa*, RUMCR *Rumex crispus*, RUMLO *Rumex longifolius*, RUMSS *Rumex* spp., SAXSS *Salix* spp., SCRAN *Scleranthus annuus*, SCUNO *Scrophularia nodosa*, SECCE *Secale cereale*, SENVU *Senecio vulgaris*, SOLNI *Solanum nigrum*, SOLTU *Solanum tuberosum*, SONAR *Sonchus arvensis*, SONAS *Sonchus asper*, SONOL *Sonchus oleraceus*, SPRAR *Spergularia arvensis*, STAPA *Stachys palustris*, STEGR *Stellaria graminea*, STEME *Stellaria media*, TAROF *Taraxacum officinale*, THCFL *Thalictrum flavum* L. ssp. *flavum*, THLAR *Thlaspi arvense*, TRFME *Trifolium medium*, TRFPR *Trifolium pratense*, TRFRE *Trifolium repens*, TRFSS *Trifolium*, TRZAS *Triticum aestivum*, spring wheat, TTTDD *Dicot weed species*, TTTMM *Monocot weed species*, TUSFA *Tussilago farfara*, URTDI *Urtica dioica*, URTUR *Urtica urens*, VERAG *Veronica agrestis*, VERAR *Veronica arvensis*, VERCH *Veronica chamaedrys*, VERPE *Veronica persica*, VERSE *Veronica serpyllifolia*, VERSS *Veronica* spp., VICCR *Vicia cracca*, VICHI *Vicia hirsuta*, VICSA *Vicia sativa*, VICSE *Vicia sepium*, VICSS *Vicia* spp., VICSY *Vicia sylvatica*, VIOAR *Viola arvensis*, VIOCA *Viola canina*, VIOPA *Viola palustris*, VIORI *Viola triviniiana*, VIOTR *Viola tricolor* L. ssp. *tricolor*;