OV15
Anagallis arvensis-Veronica persica community
Kickxietum spuriae Kruseman & Vlieger 1939

Constant species
Anagallis arvensis, *Bilderdykia convolvulus*, *Polygonum aviculare*, *Veronica persica.*

Rare species
Ajuga chamaepitys, *Scandix pecten-veneris.*

Physiognomy
The *Kickxietum spuriae* comprises annual vegetation that is usually dominated by smaller ephemerals like *Anagallis arvensis*, *Veronica persica* and *Polygonum aviculare* with twining trails of *Bilderdykia convovlulus*. However, by mid- to late summer, the most distinctive feature in many stands is the presence of one or other, often both, of *Kickxia elatine* and *K. spuria*, their downy shoots spreading among the cereal stubble that usually forms the habitat of this vegetation. *Euphorbia exigua* is another summer annual that occurs more or less frequently throughout.

Less distinctive but still common through the community as a whole are *Poa annua*, *Matricaria perforata*, *Sonchus asper*, *Myosotis arvensis*, *Elymus repens* and *Plantago major*, with *Veronica polita*, *Lapsana communis*, *Papaver rhoeas*, *Cirsium arvense*, *Galium aparine* and *Lolium perenne* occasional.

Sub-communities

***Stellaria media-Convolvulus arvensis* sub-community:** *Kickxietum spuriae* Kruseman & Vlieger 1939; unassigned aufnahmen *sensu* Silverside 1977. The two *Kickxia* spp. and *E. exigua* are frequent here but are accompanied by less distinctive weeds like *Stellaria media* and tangles of *Convolvulus arvensis*. The grasses *Avena fatua*, *Alopecurus myosuroides* and *Agrostis stolonifera* are quite common, the inflorescences of the first two often growing up among the cereal crop. *Aethusa cynapium*, *Chenopodium album* and *Anthemis cotula* are occasional.

***Legousia hybrida-Chaenorhinum minus* sub-community:** *Kickxietum spuriae* Kruseman & Vlieger 1939, *sherardietosum sensu* Silverside 1977; *Adonis autumnalis-Iberis amara* Association (Allorge 1913) R.Tx. 1950. The two *Kickxia* spp. and, more particularly, *E. exigua* show maximum frequency here and the contingent of summer annuals is further enriched by *Legousia hydrida*, *Chaenorhinum minus* and *Valerianella dentata*, creating a pretty sight when all are flowering, sometimes well into early autumn. Also quite common in this sub-community are *Sherardia arvensis*, *Reseda lutea* and *Mentha arvensis* with the nationally scarce *Ajuga chamaepitys* and *Scandix pecten-veneris* sometimes figuring where seedings established in autumn manage to survive damp winters or any tilling that precedes winter cereal sowing.

***Agrostis stolonifera-Phascum cuspidatum* sub-community:** *Kickxia elatine*-Aphanion vegetation and *Ranunculus repens* noda Silverside 1977. Summer annuals, including *K. spuria*, tend to be less common in this sub-community, where *A. stolonifera* and, more noticeably, *Ranunculus repens* are preferentially frequent. Often more striking, however, is the diversity and local abundance of a variety of acrocarpous mosses over the soil surface. Among these *Phascum cuspidatum*, *P. floerkianum*, *Barbula unguiculata*, *B. convoluta*, *Bryum rubens*, *B. klinggraeffii*, *B. microerythrocarpum*, *Dicranella staphylina* and *D. schreberana* are most frequent with *Eurhynchium praelongum* also common.

Habitat
The *Kickxietum spuriae* is characteristically a weed community of cereal crops on base-rich soils in the warmer and drier south-east of Britain.

It is the two species of *Kickxia* and *Euphorbia exigua* which give this community its distinctive character overall. Among the other frequent plants of this kind of weed vegetation, typical together of light and only moderately fertile soils, these are all of more Continental distribution in Britain, common only in the warmer and drier regions south-east of a line from the Severn to the Humber. They are also all fairly calcicolous, and this community as a whole is characteristic of lime-rich soils

derived from Chalk or other limestones like Cornbrash, Lower Purbeck or Oolite, or the limey superficials common through this region.

The most striking type of the *Kickxietum* is the *Legousia-Chaenorhinum* sub-community where a further group of calcicolous plants, *L. hybrida*, *C. minus* and also *Reseda lutea* and *Valerianella dentata*, emphasise the edaphic preference of the community as a whole. Of these, the first and last are also rather strikingly Continental in their climatic preferences. Another of the weaker preferentials, *Ajuga chamaepitys*, a nationally rare plant which finds one of its loci here, also reflects the association with open lime-rich conditions. Two other of the common preferentials of this sub-community, *Sherardia arvensis* and *Mentha arvensis*, have broader edaphic and phytogeographic affinities, being typical of disturbed soils throughout the lowlands.

The characteristic arable crops on these calcareous soils of south-east England are cereals, mostly barley and wheat (Silverside 1977), and the most frequent of the more distinctive plants of the *Kickxietum* are summer annuals (Salisbury 1964), germinating largely in spring and often surviving the harvesting of the crop by virtue of their low habit. Indeed, the late flowering of the *Kickxia* species among stubble when late summer and autumn are warm and sunny can be an especially striking feature here.

On more clayey soils, the frequency of most of these plants is reduced, but then the preferentials of the *Agrostis-Phascum* sub-community increase reflecting the moist and open ground conditions, particularly when summer and early autumn rains fall on cut cereal fields. On these heavier soils, Silverside (1977) found wheat as often as barley to be the crop, whereas generally the latter prevailed as the context of this vegetation.

The less distinctive assemblage of the *Stellaria-Convolvulus* sub-community, where *Euphorbia exigua* and the *Kickxia* species remain quite frequent but are often overwhelmed in cover by *S. media* and other nitrophilous weeds, is probably associated with more intensively fertilised crops.

Zonation and succession

The *Kickxietum* is typically found within and around cereal crops and their stubble and can occur with the *Papaveri-Sileneetum* or less distinctive weed assemblages of lighter soils like the *Matricaria perforata-Stellaria* community where crops are more heavily fertilised. Repeated cultivation enables this kind of vegetation to reappear each year and sets back any tendency to succession.

Distribution

The *Kickxietum* occurs widely but locally on suitable soils across south-east England.

Affinities

The *Kickxietum* has been described from The Netherlands (Westhof & den Held 1969), Germany (Oberdorfer 1983, Pott 1992) and Austria (Mucina *et al.* 1993). It is one of the central associations of the Caucalidion, the alliance of calcicolous weed assemblages, usually from cereal crops, in the more Continental parts of Europe. As described here, the community could include the vegetation separated off by Silverside (1977) as the *Adonis autumnalis-Iberis amara* Association (Allorge 1913) R.Tx. 1950.

Floristic table OV15

	a	b	c	15
Anagallis arvensis	V (1–5)	V (2–5)	V (2–5)	V (1–5)
Veronica persica	V (2–7)	V (1–5)	IV (2–5)	V (1–7)
Polygonum aviculare	IV (2–7)	IV (2–8)	IV (2–7)	IV (2–8)
Bilderdykia convolvulus	IV (2–5)	IV (2–5)	III (1–5)	IV (1–5)
Stellaria media	IV (1–7)	II (1–3)	II (2–7)	III (1–7)
Convolvulus arvensis	III (2–3)	II (1–5)	II (2–3)	II (1–5)
Avena fatua	II (2–7)	I (2–7)	I (2–3)	I (2–7)
Aethusa cynapium	II (2–5)	I (2–5)	I (2–3)	I (2–5)
Alopecurus myosuroides	II (2–7)	I (2)	I (3)	I (2–7)
Chenopodium album	II (1–2)	I (2–3)	I (1–3)	I (1–3)
Anthemis cotula	II (1–5)	I (4)	I (1–3)	I (1–5)
Euphorbia exigua	III (1–5)	V (1–4)	II (2–3)	III (1–5)
Kickxia elatine	III (1–3)	IV (2–5)	III (1–3)	III (1–5)
Kickxia spuria	III (1–3)	IV (2–5)	I (2–3)	III (1–5)
Legousia hybrida	I (1–2)	IV (1–3)	II (2–4)	II (1–4)
Chaenorhinum minus	I (1)	IV (1–3)	I (2–3)	II (1–3)
Sherardia arvensis		III (1–5)	I (1–2)	II (1–5)
Reseda lutea		III (1–5)	I (2)	II (1–5)
Valerianella dentata		II (1–3)	I (3)	I (1–3)
Mentha arvensis		III (1–5)	I (2)	I (1–5)
Ajuga chamaepitys		II (1–3)		I (1–3)
Silene alba		I (1–3)		I (1–3)
Filago pyramidata		I (1–3)		I (1–3)
Adonis annua		I (2–3)		I (2–3)
Scandix pecten-veneris		I (4)		I (4)
Agrostis stolonifera	III (1–5)	II (1–5)	IV (1–10)	III (1–10)
Ranunculus repens	I (1–3)	II (1–3)	IV (1–3)	III (1–3)
Phascum cuspidatum			III (1–3)	II (1–3)
Barbula unguiculata			III (1–5)	II (1–5)
Eurhynchium praelongum			III (1–3)	II (1–3)
Bryum rubens			III (1–3)	II (1–3)
Bryum klinggraeffii			II (1–3)	I (1–3)
Bryum microerythrocarpum			II (1–3)	I (1–3)
Pottia truncata			II (1–3)	I (1–3)
Dicranella staphylina			II (1–5)	I (1–5)
Dicranella schreberana			II (1–3)	I (1–3)
Barbula convoluta			II (1–3)	I (1–3)
Phascum floerkianum			II (1–3)	I (1–3)
Dicranella varia			II (1–3)	I (1–3)
Phascum curvicollum			I (1)	I (1)
Barbula fallax			I (1)	I (1)
Pottia starkeana conica			I (1–2)	I (1–2)
Poa annua	III (2–7)	III (2–5)	III (2–7)	III (2–7)
Myosotis arvensis	III (1–3)	III (1–3)	III (1–7)	III (1–7)
Matricaria perforata	III (2–5)	II (2–5)	III (2–5)	III (2–5)

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Sonchus asper	III (1–3)	III (1–3)	II (1–2)	III (1–3)
Elymus repens	III (2–5)	II (1–7)	III (2–5)	III (1–7)
Plantago major	III (1–3)	II (2–5)	III (2–3)	III (1–5)
Veronica polita	II (2–3)	III (2–5)	II (1–3)	II (1–5)
Lapsana communis	II (1–5)	III (1–5)	II (1–5)	II (1–5)
Papaver rhoeas	II (1–5)	III (1–5)	II (2–3)	II (1–5)
Cirsium arvense	II (1–3)	II (1–2)	I (1–3)	II (1–3)
Galium aparine	II (1–3)	II (2–5)	I (2–3)	II (1–5)
Lolium perenne	I (1–3)	II (2–5)	II (2–7)	II (1–7)
Medicago lupulina	I (1–3)	I (1–5)	I (1–5)	I (1–5)
Poa trivialis	I (1–3)	I (1–3)	I (1–3)	I (1–3)
Trifolium repens	I (1–3)	I (1–3)	I (1–3)	I (1–3)
Odontites verna serotina	I (1–3)	I (1)	I (1)	I (1–3)
Cerastium fontanum	I (1)	I (1)	I (1–3)	I (1–3)
Euphorbia helioscopa	I (3)	I (3)	I (2–3)	I (2–3)
Fumaria officinalis wirtgenii	I (1)	I (2–3)	I (1–3)	I (1–3)
Atriplex patula	I (1–3)	I (1–5)	I (2–3)	I (1–5)
Dactylis glomerata	I (1–3)	I (1–3)	I (1)	I (1–3)
Trifolium pratense	I (1–2)	I (1)	I (1)	I (1–2)
Heracleum sphondylium	I (1–3)		I (1)	I (1–3)
Urtica dioica	I (1–3)		I (1)	I (1–3)
Geranium dissectum	I (1)		I (1–3)	I (1–3)
Cirsium vulgare	I (1)		I (1)	I (1)
Number of samples	20	18	24	62
Number of species/sample	20 (8–32)	24 (17–33)	27 (13–50)	24 (8–50)
Herb cover (%)	55 (25–90)	57 (30–100)	72 (45–100)	62 (25–100)
Bryophyte cover (%)	–	–	9 (1–50)	3 (1–50)

a *Stellaria media-Convolvulus arvensis* sub-community
b *Legousia hybrida-Chaenorhinum minus* sub-community
c *Agrostis stolonifera-Phascum cuspidatum* sub-community
15 *Kickxietum spuriae* (total)

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