
**ASSESSING PESTICIDE RISKS TO NON-TARGET
TERRESTRIAL PLANTS**

**SECTION THREE: ASSESSING THE IMPORTANCE OF EACH PLANT
SPECIES IDENTIFIED AS A FOOD SOURCE/HABITAT FOR
VERTEBRATE AND INVERTEBRATE WILDLIFE**

APPENDICES

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APPENDICES

Appendix 3.2.1 Common and Latin names of farmland bird species considered in Section 3. Species codes refer to those used in Appendix 3.2. Biodiversity Action Plan Species are included in the UK Biodiversity Action Plans and listed in the UK Biodiversity Group Reports (Anon 1995 & 1998).

Common Name (Species Codes)	Latin Name	Biodiversity Action Plan Species
Red-legged Partridge (RL)	<i>Alectoris rufa</i>	
Grey Partridge (P)	<i>Perdix perdix</i>	**
Common Quail (Q)	<i>Coturnix coturnix</i>	
Common Pheasant (PH)	<i>Phasianus colchicus</i>	
Stone Curlew (TN)	<i>Burhinus oediconemus</i>	**
European Golden Plover (GP)	<i>Pluvialis apricaria</i>	
Northern Lapwing (L)	<i>Vanellus vanellus</i>	
Stock Dove (SD)	<i>Columba oenas</i>	
Common Wood Pigeon (WP)	<i>Columba palumbus</i>	
Eurasian Collared Dove (CD)	<i>Streptopelia decaocto</i>	
European Turtle Dove (TD)	<i>Streptopelia turtur</i>	**
Sand Martin (SM) ¹	<i>Riparia riparia</i>	
Barn Swallow (SW) ¹	<i>Hirundo rustica</i>	
House Martin (HM) ¹	<i>Delichon urbica</i>	
Skylark (S)	<i>Alauda arvensis</i>	**
Meadow Pipit (MP)	<i>Anthus pratensis</i>	
Pied Wagtail (PW) ¹	<i>Motacilla alba</i>	
Yellow Wagtail (YW) ¹	<i>Motacilla flava</i>	
Winter Wren (WR)	<i>Troglodytes troglodytes</i>	
Hedge Accentor (Dunnock) (D)	<i>Prunella modularis</i>	
European Robin (R)	<i>Erithacus rubecula</i>	
Common Blackbird (B)	<i>Turdus merula</i>	
Spotted Flycatcher (SF) ¹	<i>Muscicapa dauurica</i>	
Fieldfare (FF)	<i>Turdus pilaris</i>	
Song Thrush (ST)	<i>Turdus philomelos</i>	**
Redwing (RE)	<i>Turdus iliacus</i>	

Appendix 3.2.1(cont) Common and Latin names of farmland bird species considered in Section 3. Species codes refer to those used in Appendix 3.2. Biodiversity Action Plan Species are included in the UK Biodiversity Action Plans and listed in the UK Biodiversity Group Reports (Anon 1995 & 1998).

Common Name (Species Codes)	Latin Name	Biodiversity Action Plan Species
Mistle Thrush (M)	<i>Turdus viscivorus</i>	
Common Starling (SG)	<i>Sturnus vulgaris</i>	
House Sparrow (HS)	<i>Passer domesticus</i>	
Tree Sparrow (TS)	<i>Passer montanus</i>	
Chaffinch (CH)	<i>Fringilla coelebs</i>	
European Greenfinch (GR)	<i>Carduelis chloris</i>	
European Goldfinch (GO)	<i>Carduelis carduelis</i>	
Common Linnet (LI)	<i>Carduelis cannabina</i>	**
Common Bullfinch (BF)	<i>Pyrrhula pyrrhula</i>	
Yellowhammer (Y)	<i>Emberiza citrinella</i>	
Cirl Bunting (CL)	<i>Emberiza cirrus</i>	**
Reed Bunting (RB)	<i>Emberiza schoeniclus</i>	**
Corn Bunting (CB)	<i>Miliaria calandra</i>	**

¹ indicates species that are feed exclusively on invertebrates

Appendix 3.2.2a Plant families recorded as present and important in the diet of 33 species of farmland bird (plant material has not been recorded in the diet of six species, see Appendix 3.2.1). Only those families that contain one or more of the non-target plant species listed in Section One are considered. A food taxon is considered important in the diet if it comprises a mean of more than 5% of the diet over all quantitative studies reviewed (see text in see Section 3.2.2). Shaded bird species are included in the UK Biodiversity Action Plans and listed in the UK Biodiversity Group Reports (Anon 1995 & 1998). The species codes are as given in Appendix 3.2.1.

	R L	P	P H	Q	T N	L	G P	S D	W P	C D	T D	S	M P	B	S T	M	R	D	W R	S G	H S	T S	C H	L I	G R	G O	B F	Y	C L	R B C B F F R E	
CORYLACEAE			P					P	P	P														P		P		P			
URTICACEAE								P	P		P	P						I			P	P	P	P		P	I	P	P		P
POLYGONACEAE	I	I	I	P	P	P	P	I	P	P	I	I	P					I			I	I	I	I	I	I	I	I	P		P
CHENOPODIACEAE	I	P	I					I	P	P	I	I	P		P			P			P	I	I	I	I	I	I	I	P		I
CAROPHYLLACEAE	I	I	I	P	P	P		I	I	P	P	P					P	I		P	I	I	I	I	I	I	P	I	P	P	I
RANUNCULACEAE	P	P						I	I	P	P	P						P			P	P	P	P	P	P	I				P
PAPAVERACEAE												P						P			P	P		P		P	P				
CRUCIFERAE	P		P	P				I	I	P	I	P	P		P			P		P	P	P	I	I	I	P	I				I
ROSACEAE	I		I					P	I	P	P		P	I	P	I	I	P	P	P	P	P	P	P	I	I	I	P			P
	I	I	I	P				I	I	P	I	P			P			P		P	P	P	P	P	P	P	P	P	P		I

	R	P	P	Q	T	L	G	S	W	C	T	S	M	B	S	M	R	D	W	S	H	T	C	L	G	G	B	Y	C	R	
	L		H		N		P	D	P	D	D	P	P	P	T				R	G	S	S	H	I	R	O	F		L	B	
ONAGRACEAE																		P			P		P	P		P	P			P	
UMBELLIFERAE	P		P							P																	P				
PRIMULACEAE											P	P						P					P	P	P					P	

Appendix 3.2.2a (cont) Plant families recorded as present and important in the diet of 33 species of farmland bird (plant material has not been recorded in the diet of six species, see Appendix 3.2.1). Only those families that contain one or more of the non-target plant species listed in Section One are considered. A food taxon is considered important in the diet if it comprises a mean of more than 5% of the diet over all quantitative studies reviewed (see text in see Section 3.2.2). Shaded bird species are included in the UK Biodiversity Action Plans and listed in the UK Biodiversity Group Reports (Anon 1995 & 1998). The species codes are as given in Appendix 3.2.1.

	R L	P	P H	Q	T N	L	G P	S D	W P	C D	T D	S	M P	B	S T	M	R	D	W R	S G	H S	T S	C H	L I	G R	G O	B F	Y	C L	R B C B F R E		
CONVOLVULACEAE			P						P	P	P				P									P								
RUBIACEAE			P					I		P	P				P		P				P	P	P		P							
LABIATAE	P	I	I	I			P					I						P		P	P	P		P	P		P	P		P		
SCROPHULARIACEAE		P	P	P					P		P	P	I					P			P	P	P	P			P					
COMPOSITAE/ASTEROEAE	I	P	I					I	P	I	I	P						P		P	P	P	I	I	I	I	I	I	P	P	P	
DIPSACACEAE																							P	P	P	I	P					
LILIACEAE			P						P						P							P										
GRAMINEAE	I	I	I	P	I	P	I	I	I	I	I	I	I	P			P	I		I	I	I	I	I	I	I	P	I	I	I	I	P

Appendix 3.2.2b Plant genera recorded as present and important in the diet of 33 species of farmland bird (plant material has not been recorded in the diet of six species see Appendix 3.2.1). Only those genera that contain one or more of the non-target plant species listed in Section One are considered. A food taxon is considered important in the diet if it comprises a mean of more than 5% of the diet over all quantitative studies reviewed (see text in see Section 3.2.2). Shaded bird species are included in the UK Biodiversity Action Plans and listed in the UK Biodiversity Group Reports (Anon 1995 & 1998). The species codes are as given in Appendix 3.2.1.

	R L	P	P H	Q	T N	L	G P	S D	W P	C D	T D	S	M P	B	S T	M	R	D	W R	S G	H S	T S	C H	L I	G R	G O	B F	Y	C L	R B C B F R E
Polygonum	I	I	I	P		P		I	P	P	I	I	P					I			I	I	I	I	I			P		P
Chenopodium		P	I					I		P	I		P		P			P		P	I	I	I	I	P	I	I	P		I
Alliaria																								P	P		P			
Crataegus			P						P					I		I							P	P	P		I			P
Vicia	I	I	P	P				I	P	P	P							P		P					P					
Trifolium	I	I	I					P	I			P			P					P			P	P	P	P	P	P		
Lotus			P															P												
Taraxacum								P	P											P				I	I	I	I	P		
Centaurea	I	P	P					P			P													P	P	P		P		
Cirsium			P															P						I	P	I				
Carduus																								P	P	P				
Festuca		P									I																	I		P
Dactylis																								P		P				
Agrostis		P	I																											

Appendix 3.1 Utilisation of the selected flora by adult insects as a nectar and/or pollen source. Compiled from: ¹Colyer and Hammond 1968; ²Cowgill, Wratten et al. 1993; ³Feber, Smith et al. 1994; ⁴Free and Butler 1959, Free 1993; ⁵Fussell and Corbet 1992; ⁶Harde and Hammond 1984; ⁷Joy 1933; ⁸Lack 1982; ⁹Linssen 1959a, 1959b; ¹⁰Wratten and van Emden 1995; ¹¹Coe 1953; otherwise unpublished observations (D.A. Kendall).

Plant species	Common name	Insect taxon (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	-
<i>Crataegus monogyna</i>	Hawthorn	Anthomyiidae (Anthomyid Flies) <i>Bombus</i> spp. (Bumblebees) ^{5,8} Cantharidae (Soldier Beetles) ⁷ Cerambycidae (Longhorn Beetles) ⁶ Conopidae (Conopid Flies) ¹ Empididae (Empidid Flies) ¹ Malachiidae (Malachid Beetles) ⁶ Mordellidae (Tumbling Flower Beetles) ⁷ Syrphidae (Hoverflies) ^{1,11}
<i>Tamus communis</i>	Black bryony	-
Annual weed species		
<i>Centaurea cyanus</i>	Cornflower	<i>Bombus</i> spp. (Bumblebees) ⁴ Syrphidae (Hoverflies) ¹
<i>Chenopodium album</i>	Fathen	-
<i>Chrysanthemum segetum</i>	Corn marigold	Syrphidae (Hoverflies) ¹
<i>Galium aparine</i>	Cleavers	-
<i>Matricaria recutita</i>	Mayweed	Syrphidae (Hoverflies) ²
<i>Papaver rhoeas</i>	Common poppy	-
<i>Polygonum aviculare</i>	Knotgrass	Syrphidae (Hoverflies) ²
Woodland/hedge ground flora		
<i>Alliaria petiolata</i>	Hedge garlic	-
<i>Arum maculatum</i>	Lords-and-Ladies	Small Diptera (Flies) and Coleoptera (Beetles)
<i>Digitalis purpurea</i>	Foxglove	<i>Bombus</i> spp. (Bumblebees) ⁵
<i>Galium mollugo</i>	Hedge-bedstraw	-
<i>Hyacinthoides non-scripta</i>	Bluebell	-
<i>Lamiastrum galeobdolon</i>	Yellow archangel	-
<i>Lamium album</i>	White dead-nettle	<i>Bombus</i> spp. (Bumblebees) ⁵ Syrphidae (Hoverflies) ²
<i>Primula vulgaris</i>	Primrose	<i>Bombus</i> spp. (Bumblebees) ^{5,8} Bombyliidae (Bee Flies) ¹
<i>Vicia sepium</i>	Bush vetch	<i>Bombus</i> spp. (Bumblebees) ^{4,5}

Tall herbs		
<i>Carduus acanthoides</i>	Wetted thistle	<i>Bombus</i> spp. (Bumblebees) ⁵ Satyridae (Butterflies/Browns) ³ Syrphidae (Hoverflies)
<i>Cirsium arvense</i>	Creeping thistle	<i>Bombus</i> spp. (Bumblebees) ⁵ Satyridae (Butterflies/Browns) ³ Syrphidae (Hoverflies) ²
<i>Convolvulus arvensis</i>	Field bindweed	Satyridae (Butterflies/Browns) ³ Syrphidae (Hoverflies) ²
<i>Dipsacus fullonum</i>	Teasel	-
<i>Chamerion angustifolium</i>	Willowherb	<i>Bombus</i> spp. (Bumblebees) ^{5,8} Pieridae (Butterflies/Whites) ⁸
<i>Heracleum sphondylium</i>	Hogweed	Anthomyiidae (Anthomyid Flies) ¹ <i>Bombus</i> spp. (Bumblebees) ⁵ Braconidae, etc. (Aphid-parasitoid Wasps) ¹⁰ Calliphoridae (Blow-flies) ¹ Cantharidae (Soldier Beetles) ^{7, 9} Cerambycidae (Longhorn Beetles) ^{7, 9} Conopidae (Conopid Flies) ¹ Empididae (Empidid Flies) ¹ Lagriidae (Lagrid Beetles) Malachiidae (Malachid Beetles) Mordellidae (Tumbling Flower Beetles) ⁹ Muscidae (Muscid Flies) ¹ Oedemeridae (Oedemerid Beetles) Pyrochroidae (Cardinal Beetles) Syrphidae (Hoverflies) ²
<i>Torilis japonica</i>	Hedge parsley	Anthomyiidae (Anthomyid Flies) ¹ Braconidae, etc. (Aphid-parasitoid Wasps) ¹⁰ Calliphoridae (Blow-flies) ¹ Conopidae (Conopid Flies) ¹ Empididae (Empidid Flies) ¹ Muscidae (Muscid Flies) ¹ Syrphidae (Hoverflies)
<i>Urtica dioica</i>	Nettle	-
Grassland		
<i>Centaurea nigra</i>	Knapweed	<i>Bombus</i> spp. (Bumblebees) ^{5,8} Hesperiidae (Butterflies/Skippers) ⁸ Lycaenidae (Butterflies/Blues) ⁸ Pieridae (Butterflies/Whites) ⁸ Noctuidae (Noctuid Moths) ⁸ Nymphalidae (Butterflies/Tortoiseshells, etc) ⁸ Satyridae (Butterflies/Browns) ^{3,8} Syrphidae (Hoverflies) ⁸ Zygaenidae (Burnet Moths) ⁸

<i>Daucus carota</i>	Wild carrot	<i>Andrena</i> spp., <i>Halictus</i> spp. (Solitary Bees) ⁴ Anthomyiidae (Anthomyid Flies) ¹ Braconidae, etc. (Aphid-parasitoid Wasps) ¹⁰ Calliphoridae (Blow-flies) ¹ Conopidae (Conopid Flies) ¹ Empididae (Empidid Flies) ¹ Muscidae (Muscid Flies) ¹ Stratiomyidae (Soldier-flies) ⁴ Syrphidae (Hoverflies) ^{2,4}
<i>Leucanthemum vulgare</i>	Ox-eye daisy	Satyridae (Butterflies/Browns) ³ Syrphidae (Hoverflies)
<i>Lotus corniculatus</i>	Eggs and bacon	<i>Bombus</i> spp. (Bumblebees) ^{4,5} <i>Megachile</i> spp., <i>Osmia</i> spp., etc. (Solitary Bees) ⁴
<i>Lychnis flos-cuculi</i>	Ragged robin	Syrphidae (Hoverflies) ¹
<i>Ranunculus repens</i>	Buttercup	<i>Bombus</i> spp. (Bumblebees) ⁵ Satyridae (Butterflies/Browns) ³ Syrphidae (Hoverflies) ²
<i>Taraxacum officinale</i>	Dandelion	<i>Andrena</i> spp., <i>Halictus</i> spp. (Solitary Bees) ⁴ <i>Bombus</i> spp. (Bumblebees) ^{4,5} Syrphidae (Hoverflies) ²
<i>Trifolium repens</i>	White clover	<i>Bombus</i> spp. (Bumblebees) ^{4,5} Satyridae (Butterflies/Browns) ³
<i>Vicia sativa</i>	Common vetch	<i>Bombus</i> spp. (Bumblebees) ^{4,5}
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	Malachiidae (Malachid Beetles) ⁶

Appendix 3.2 Use of the selected flora by butterflies and larger moths (Lepidoptera) as larval food-plants (excluding highly polyphagous species). Compiled from: Allan 1949; Emmet, Goater et al. 1991 (potential pest species indicated in bold type, see Appendix 3.7).

Plant species	Common name	Insect taxon/species (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	{Sphingidae} <i>Mimas tiliae</i> (Lime Hawk) {Notodontidae} <i>Stauropus fagi</i> (Lobster) <i>Notodonta dromedarius</i> (Iron Prominent) <i>Ptilodon capucina</i> (Coxcomb Prominent) <i>Phalera bucephala</i> (Buff-tip) <i>Ochropacha duplaris</i> (Common Lutestring) {Lymantriidae} <i>Orgyia</i> spp. (Vapourers) <i>Dasychira</i> spp. (Tussocks) {Noctuidae} <i>Pseudoips fagana</i> (Green Silver-lines) {Geometridae} <i>Geometra papilionaria</i> (Large Emerald)
<i>Crataegus monogyna</i>	Hawthorn	{Notodontidae} <i>Stauropus fagi</i> (Lobster) <i>Lophopteryx capucina</i> (Coxcomb Prominent) <i>Diloba caeruleocephala</i> (Figure of Eight) {Lymantriidae} <i>Orgyia</i> spp. (Vapourers) <i>Dasychira</i> spp. (Tussocks) <i>Euproctis</i> spp. (Brown- & Yellow-tails) <i>Lymantria dispar</i> (Gipsy) {Lasiocampidae} <i>Eriogaster lanestris</i> (Small Eggar) <i>Trichura crataegi</i> (Pale Eggar) <i>Lasiocampa quercus</i> (Oak Eggar) <i>Gastropacha quercifolia</i> (Lappet) {Noctuidae} <i>Acronicta psi</i> (Grey Dagger) {Drepanidae} <i>Cilix glaucata</i> (Chinese Character) {Geometridae} <i>Eupithecia</i> spp. (Pugs)
<i>Tamus communis</i>	Black bryony	-
Annual weed species		

<i>Centaurea cyanus</i>	Cornflower	-
<i>Chenopodium album</i>	Fathen	{Noctuidae} <i>Agrotis exclamatoris</i> (Heart and Dart)
<i>Chrysanthemum segetum</i>	Corn marigold	-
<i>Galium aparine</i>	Cleavers	{Spingidae} <i>Deilephila porcellus</i> (Small Elephant Hawk)
<i>Matricaria recutita</i>	Mayweed	{Noctuidae} <i>Cucullia chamomillae</i> (Chamomile Shark)
<i>Papaver rhoeas</i>	Common poppy	-
<i>Polygonum aviculare</i>	Knotgrass	{Lasiocampidae} <i>Macrothylacia rubi</i> (Fox) {Noctuidae} <i>Rhyacia simulans</i> (Dotted Rustic) {Geometridae} <i>Timandra griseata</i> (Blood-vein) <i>Orthonama obstipata</i> (Gem) <i>Scopula</i> spp., <i>Idaea</i> spp. (Waves)
Woodland/hedge ground flora		
<i>Alliaria petiolata</i>	Hedge garlic	{Geometridae} <i>Xanthorhoe fluctuata</i> (Garden Carpet)
<i>Arum maculatum</i>	Lords-and-Ladies	-
<i>Digitalis purpurea</i>	Foxglove	{Nymphalidae} <i>Mellicta athalia</i> (Heath Fritillary) {Noctuidae} <i>Gortyna flavago</i> (Frosted Orange) {Geometridae} <i>Eupithecia pulchellata</i> (Foxglove Pug)
<i>Galium mollugo</i>	Hedge-bedstraw	{Sphingidae} <i>Macroglossum stellatarum</i> (Hummingbird Hawk)* <i>Hyles galli</i> (Bedstraw Hawk)* <i>Deilephila elpenor</i> (Elephant Hawk) <i>Deilephila porcellus</i> (Small Elephant Hawk) {Geometridae} Many Larentiinae (Carpets)
<i>Hyacinthoides non-scripta</i>	Bluebell	-
<i>Lamiastrum galeobdolon</i>	Yellow archangel	{Geometridae} <i>Pseudopanthera macularia</i> (Speckled Yellow)
<i>Lamium album</i>	White dead-nettle	{Noctuidae} <i>Diachrysia chrysitis</i> (Burnished Brass)

		<i>Hoplodrina alsines</i> (The Uncertain) {Geometridae} <i>Pseudopanthera macularia</i> (Speckled Yellow)
<i>Primula vulgaris</i>	Primrose	{Riodinidae} <i>Hamearis lucina</i> (Duke of Burgundy) {Noctuidae} <i>Hoplodrina alsines</i> (The Uncertain)
<i>Vicia sepium</i>	Bush vetch	{Geometridae} <i>Scatopteryx chenopdiata</i> (Shaded Broad-bar)
Tall herbs		
<i>Carduus acanthoides</i>	Wetted thistle	{Nymphalidae} <i>Cynthia cardui</i> (Painted Lady) {Noctuidae} <i>Gortyna flavago</i> (Frosted Orange)
<i>Cirsium arvense</i>	Creeping thistle	{Nymphalidae} <i>Cynthia cardui</i> (Painted Lady) {Noctuidae} <i>Gortyna flavago</i> (Frosted Orange)
<i>Convolvulus arvensis</i>	Field bindweed	{Sphingidae} <i>Agrius convolvuli</i> (Convolvulus Hawk)*
<i>Dipsacus fullonum</i>	Teasel	-
<i>Chamerion angustifolium</i>	Willowherb	{Sphingidae} <i>Hyles galli</i> (Bedstraw Hawk)* <i>Deilephila elpenor</i> (Elephant Hawk) <i>Deilephila porcellus</i> (Small Elephant Hawk)
<i>Heracleum sphondylium</i>	Hogweed	{Papilionidae} <i>Papilio machaon</i> (Swallow-tail) {Noctuidae} <i>Dasypolia templi</i> (Brindled Ochre) {Geometridae} <i>Eupithecia trisignaria</i> (Triple-spotted Pug) <i>Eupithecia tripunctaria</i> (White-spotted Pug)
<i>Torilis japonica</i>	Hedge parsley	-
<i>Urtica dioica</i>	Nettle	{Nymphalidae} <i>Vanessa atalanta</i> (Red Admiral) <i>Cynthia cardui</i> (Painted Lady) <i>Aglais urticae</i> (Small Tortoiseshell) <i>Inachis io</i> (Peacock) <i>Polygonia c-album</i> (Coma) {Arctiidae} <i>Callimorpha dominula</i> (Scarlet Tiger) {Noctuidae} <i>Diachrysia chrysitis</i> (Burnished Brass) <i>Caradrina morpheus</i> (Mottled Rustic) <i>Hypena proboscidalis</i> (The Snout)

		<i>Abrostola</i> spp. (Spectacles)
Grassland		
<i>Centaurea nigra</i>	Knapweed	-
<i>Daucus carota</i>	Wild carrot	{Papilionidae} <i>Papilio machaon</i> (Swallow-tail) {Geometridae} <i>Aspitates ochrearia</i> (Yellow Belle)
<i>Leucanthemum vulgare</i>	Ox-eye daisy	{Arctiidae} <i>Tyria jacobaeae</i> (Cinnabar)
<i>Lotus corniculatus</i>	Eggs and bacon	{Pieridae} <i>Leptidea sinapis</i> (Wood White) <i>Colias hyale</i> (Pale Clouded Yellow) <i>Colias croceus</i> (Clouded Yellow) {Lycaenidae} <i>Polyommatus icarus</i> (Common Blue) <i>Lysandra coridon</i> (Chalkhill Blue) {Hesperiidae} <i>Erynnis tages</i> (Dingy Skipper) {Lasiocampidae} <i>Lasiocampa trifolii</i> (Grass Eggar) {Noctuidae} <i>Euclidia glyphica</i> (Burnet Companion) {Geometridae} <i>Scatopteryx bipunctaria</i> (Chalk Carpet) <i>Selidosema brunnearia</i> (Bordered Grey)
<i>Lychnis flos-cuculi</i>	Ragged robin	-
<i>Ranunculus repens</i>	Buttercup	-
<i>Taraxacum officinale</i>	Dandelion	{Arctiidae} <i>Phragmatobia fuliginosa</i> (Ruby Tiger) <i>Diacrisia sannio</i> (Clouded Buff) {Noctuidae} <i>Caradrina morpheus</i> (Mottled Rustic) <i>Rhyacia simulans</i> (Dotted Rustic) {Geometridae} <i>Scopula</i> spp., <i>Idaea</i> spp. (Waves)
<i>Trifolium repens</i>	White clover	{Pieridae} <i>Colias hyale</i> (Pale Clouded Yellow) <i>Colias croceus</i> (Clouded Yellow) {Lycaenidae} <i>Polyommatus icarus</i> (Common Blue) {Noctuidae} <i>Euclidia glyphica</i> (Burnet Companion) {Geometridae} <i>Scatopteryx chenopdiata</i> (Shaded Broad-bar) <i>Scatopteryx bipunctaria</i> (Chalk Carpet) <i>Semiothisa clathrata</i> (Latticed Heath) <i>Ematurga atomaria</i> (Common Heath)
<i>Vicia sativa</i>	Common vetch	{Geometridae}

		<i>Scatopteryx chenopdiata</i> (Shaded Broad-bar)
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	{Satyridae} <i>Pararge aegeria</i> (Specked Wood) <i>Pararge megera</i> (Wall) <i>Melanargia galthea</i> (Marbled White) <i>Hipparchia semele</i> (Grayling) <i>Pyronia tithonus</i> (Gatekeeper) <i>Maniola jurtina</i> (Meadow Brown) <i>Coenonympha pamphilus</i> (Small Heath) <i>Aphantopus hyperantus</i> (Ringlet) {Hesperiidae} <i>Thymelicus sylvestris</i> (Small Skipper) <i>Thymelicus lineola</i> (Essex Skipper) <i>Ochlodes venata</i> (Large Skipper) {Lasiocampidae} <i>Euthrix potatoria</i> (Drinker) {Noctuidae} <i>Omphaloscelis lunosa</i> (Lunar Underwing) <i>Thalpophila matura</i> (Straw Underwing) <i>Rivula sericealis</i> (Straw Dot) <i>Mesapamea secalis</i> (Common Rustic) <i>Eremobia ochroleuca</i> (Dusky Sallow) <i>Apamea</i> spp. (Arches, etc.), <i>Oligia</i> spp. (Minors), <i>Mythimna</i> spp. (Wainscots) and other Noctuidae

*non-residents in the UK

Appendix 3.3 Utilisation of the selected flora by sawflies (Hymenoptera, Symphyta) as larval food-plants. Compiled from: Benson 1951, 1952, 1958 (potential pest species indicated in bold type, see Appendix 3.7).

Plant species	Common name	Insect taxon/species (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	<i>Pamphilius fumipennis</i> <i>Tenthredo fagi</i> <i>Croesus septentrionalis</i> (Hazel Sawfly) <i>Nematus umbratus</i>
<i>Crataegus monogyna</i>	Hawthorn	<i>Neurotoma saltuum</i> (Social Pear Sawfly) <i>Pamphilius sylvaticus</i> <i>Arge ustulata</i> <i>Trichiosoma tibiale</i> (Hawthorn Sawfly) <i>Priophorus pallipes</i> (Plum Leaf Sawfly) <i>Priophorus pilicornis</i> <i>Hoplocampa crataegi</i> <i>Hoplocampa pectoralis</i> <i>Dineura stilata</i> <i>Pristiphora crassicornis</i> <i>Nematus lucidus</i>
<i>Tamus communis</i>	Black bryony	-
Annual weed species		
<i>Centaurea cyanus</i>	Cornflower	-
<i>Chenopodium album</i>	Fathen	<i>Ametastegia equiseti</i> <i>Ametastegia glabrata</i> (Dock Sawfly)
<i>Chrysanthemum segetum</i>	Corn marigold	-
<i>Galium aparine</i>	Cleavers	<i>Halidamia affinis</i>
<i>Matricaria recutita</i>	Mayweed	-
<i>Papaver rhoeas</i>	Common poppy	-
<i>Polygonum aviculare</i>	Knotgrass	<i>Ametastegia equiseti</i> <i>Ametastegia glabrata</i> (Dock Sawfly)
Woodland/hedge ground flora		
<i>Alliaria petiolata</i>	Hedge garlic	-
<i>Arum maculatum</i>	Lords-and-Ladies	-
<i>Digitalis purpurea</i>	Foxglove	-
<i>Galium mollugo</i>	Hedge-bedstraw	<i>Halidamia affinis</i> <i>Aglaostigma aucupariae</i> <i>Aglaostigma fulvipes</i>
<i>Hyacinthoides non-scripta</i>	Bluebell	-
<i>Lamiastrum galeobdolon</i>	Yellow archangel	-

<i>Lamium album</i>	White dead-nettle	-
<i>Primula vulgaris</i>	Primrose	-
<i>Vicia sepium</i>	Bush vetch	-
Tall herbs		
<i>Carduus acanthoides</i>	Wetted thistle	-
<i>Cirsium arvense</i>	Creeping thistle	-
<i>Convolvulus arvensis</i>	Field bindweed	-
<i>Dipsacus fullonum</i>	Teasel	-
<i>Chamerion angustifolium</i>	Willowherb	-
<i>Heracleum sphondylium</i>	Hogweed	-
<i>Torilis japonica</i>	Hedge parsley	-
<i>Urtica dioica</i>	Nettle	-
Grassland		
<i>Centaurea nigra</i>	Knapweed	-
<i>Daucus carota</i>	Wild carrot	-
<i>Leucanthemum vulgare</i>	Ox-eye daisy	-
<i>Lotus corniculatus</i>	Eggs and bacon	-
<i>Lychnis flos-cuculi</i>	Ragged robin	-
<i>Ranunculus repens</i>	Buttercup	<i>Monophadnus pallescens</i> <i>Pseudodineura fuscula</i>
<i>Taraxacum officinale</i>	Dandelion	-
<i>Trifolium repens</i>	White clover	<i>Tenthredo arcuata</i> <i>Tenthredo perkinsi</i> <i>Nematus myosotidis</i>
<i>Vicia sativa</i>	Common vetch	-
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	<i>Seandria serva</i> <i>Dolerus</i> spp. <i>Eutomostethus ephippium</i> <i>Tenthredopsis litterata</i> <i>Tenthredopsis friesei</i> <i>Tenthredopsis nassata</i> <i>Pachynematus obductus</i> <i>Pachynematus apicalis</i> <i>Pachynematus truncatus</i> <i>Pachynematus clitellatus</i>

Appendix 3.4 Utilisation of the selected flora by beetles (Coleoptera) as adult and/or larval food-plants. Compiled from: ¹Edwards and Heath 1964; ²Smith 1931; otherwise Bullock 1992 (potential pest species indicated in bold type, see Appendix 3.7).

Plant species	Common name	Insect taxon/species (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	{ Buprestidae} <i>Agrilus angustulus</i> <i>Agrilus laticornis</i> <i>Trachys minuta</i> { Chrysomelidae} <i>Gynandrophthalma affinis</i> <i>Cryptocephalus labiatus</i> <i>Cryptocephalus nitidulus</i> <i>Cryptocephalus sexpunctatus</i> <i>Phytodecta pallida</i> <i>Luperus flavipes</i> <i>Altica brevicollis</i> { Curculionidae} <i>Apoderus coryli</i> <i>Byctiscus betulae</i> <i>Deporaus betulae</i> <i>Strophosoma melanogrammum</i> (Nut Leaf Weevil) <i>Curculio nucum</i> (Nut Weevil) <i>Rhynchaenus avellanae</i> <i>Rhynchaenus stigma</i> { Melandryidae} <i>Hypulus quercinus</i> { Scolytidae} <i>Dryocoetinus alni</i> <i>Triotemnus (=Lymantor) coryli</i>
<i>Crataegus monogyna</i>	Hawthorn	{ Anobiidae} <i>Hadrobregmus denticollis</i> { Anthribidae} <i>Anthribus fasciatus</i> <i>Anthribus nebulosus</i> { Buprestidae} <i>Anthaxia nitidula</i> <i>Agrilus sinuatus</i> { Cerambycidae} <i>Anaglyptus mysticus</i> <i>Tetrops praeusta</i> { Chrysomelidae} <i>Orsodacne cerasi</i> <i>Orsodacne lineola</i> <i>Lochmaea crataegi</i> { Cleridae} <i>Opilo mollis</i>

		{Curculionidae} <i>Rhynchites caeruleus</i> (Apple Twig Cutter) <i>Rhynchites aequatus</i> <i>Rhynchites paxillus</i> <i>Magdalis barbicornis</i> (Pear Weevil) <i>Magdalis cerasi</i> <i>Anthonomus bituberculatus</i> <i>Anthonomus chevrolati</i> <i>Anthonomus pedicularius</i> <i>Ramphus oxyacanthae</i> {Scolytidae} <i>Scolytus mali</i> (Large Fruit Bark Beetle)
<i>Tamus communis</i>	Black bryony	-
Annual weed species		
<i>Centaurea cyanus</i>	Cornflower	{Chrysomelidae} <i>Sphaeroderma testaceum</i> <i>Cassida vibex</i> (Tortoise Beetle)
<i>Chenopodium album</i>	Fathen	{Carabidae} <i>Amara convexuscula</i> {Chrysomelidae} <i>Cassida nebulosa</i> (Tortoise Beetle) {Curculionidae} <i>Chromoderus affinis</i> {Silphidae} <i>Aclypea opaca</i> (Beet Carrion Beetle)^{1,2}
<i>Chrysanthemum segetum</i>	Corn marigold	-
<i>Galium aparine</i>	Cleavers	{Chrysomelidae} <i>Timarcha goettingensis</i> <i>Timarcha tenebricosa</i> (Bloody-nosed Beetle) <i>Sermylassa halensis</i>
<i>Matricaria recutita</i>	Mayweed	{Carabidae} <i>Amara aulica</i> {Chrysomelidae} <i>Ochrosis ventralis</i> {Curculionidae} <i>Apion hookeri</i> <i>Apion laevigatum</i> {Phalacridae} <i>Olibrus aeneus</i>
<i>Papaver rhoeas</i>	Common poppy	{Curculionidae} <i>Stenocarus ruficornis</i> (=umbrinus)
<i>Polygonum aviculare</i>	Knotgrass	{Chrysomelidae} <i>Gastrophysa polygoni</i> <i>Chaetocnema concinna</i> (Mangold Flea Beetle) {Curculionidae}

		<i>Apion lemoroi</i> <i>Amalus scortillum</i> <i>Pelenomus (=Phytobius) quadrituberculatus</i> <i>Rhinoncus perpendicularis</i>
Woodland/hedge ground flora		
<i>Alliaria peteolata</i>	Hedge garlic	{Chrysomelidae} <i>Phyllotreta ochripes</i> {Curculionidae} <i>Ceuthorhynchus alliariae</i> <i>Ceuthorhynchus constrictus</i> <i>Ceuthorhynchus thomsoni</i>
<i>Arum maculatum</i>	Lords-and-Ladies	-
<i>Digitalis purpurea</i>	Foxglove	-
<i>Galium mollugo</i>	Hedge-bedstraw	{Chrysomelidae} <i>Timarcha goettingensis</i> <i>Timarcha tenebricosa</i> (Bloody-nosed Beetle) <i>Sermylassa halensis</i>
<i>Hyacinthoides non-scripta</i>	Bluebell	-
<i>Lamiastrum galeobdolon</i>	Yellow archangel	{Nitidulidae} <i>Meligethes atramentarium</i> <i>Meligethes kunzei</i> <i>Meligethes haemorrhoidalis</i>
<i>Lamium album</i>	White dead-nettle	{Nitidulidae} <i>Meligethes difficilis</i> <i>Meligethes morosus</i>
<i>Primula vulgaris</i>	Primrose	-
<i>Vicia sepium</i>	Bush vetch	{Bruchidae} <i>Bruchus atomarius</i> <i>Bruchus rufimanus</i> (Bean Beetle) <i>Bruchus rufipes</i> {Chrysomelidae} <i>Derocrepis rufipes</i> {Curculionidae} <i>Apion aethiops</i> <i>Apion afer</i> <i>Apion vorax</i> <i>Apion punctigerum</i> <i>Sitona ambiguus</i> <i>Sitona lineatus</i> (Pea Weevil) <i>Sitona puncticollis</i> <i>Sitona sulcifrons</i> <i>Sitona suturalis</i> <i>Tychius quinquepunctatus</i>
Tall herbs		

<i>Carduus acanthoides</i>	Wetted thistle	{Chrysomelidae} <i>Crepidodera ferruginea</i> (Wheat Flea Beetle) <i>Sphaeroderma rubidum</i> <i>Sphaeroderma testaceum</i> <i>Psylliodes chalconera</i> <i>Cassida rubiginosa</i> (Tortoise Beetle) <i>Cassida vibex</i> (Tortoise Beetle) {Curculionidae} <i>Apion carduorum</i> <i>Apion gibbirostre</i> <i>Apion onopordi</i> <i>Cleonus piger</i> <i>Trichosirocalus horridus</i>
<i>Cirsium arvense</i>	Creeping thistle	{Chrysomelidae} <i>Crepidodera ferruginea</i> (Wheat Flea Beetle) <i>Crepidodera transversa</i> <i>Sphaeroderma rubidum</i> <i>Sphaeroderma testaceum</i> <i>Cassida rubiginosa</i> (Tortoise Beetle) <i>Cassida vibex</i> (Tortoise Beetle) <i>Lema cyanella</i> {Curculionidae} <i>Apion carduorum</i> <i>Apion gibbirostre</i> <i>Apion onopordi</i> <i>Cleonus piger</i> <i>Trichosirocalus horridus</i> <i>Hadroplontus litura</i> <i>Lixus algirus</i> <i>Larinus planus</i> {Mordellidae} <i>Mordellistena pumila</i> <i>Mordellistena acuticollis</i>
<i>Convolvulus arvensis</i>	Field bindweed	{Chrysomelidae} <i>Longitarsus pellucidus</i>
<i>Dipsacus fullonum</i>	Teasel	{Chrysomelidae} <i>Longitarsus fowleri</i>
<i>Chamerion angustifolium</i>	Willowherb	{Chrysomelidae} <i>Bromius obscura</i>
<i>Heracleum sphondylium</i>	Hogweed	{Chrysomelidae} <i>Phaedon tumidulus</i> {Curculionidae} <i>Liparus germanus</i>
<i>Torilis japonica</i>	Hedge parsley	-
<i>Urtica dioica</i>	Nettle	{Chrysomelidae} <i>Crepidodera ferruginea</i> (Wheat Flea Beetle)¹ {Curculionidae}

		<i>Apion urticarium</i> <i>Phyllobius pomaceus</i> <i>Nedyus quadrimaculatus</i> <i>Parethelcus pollinarius</i> {Nitidulidae} <i>Brachypterus glaber</i> <i>Brachypterus urticae</i>
Grassland		
<i>Centaurea nigra</i>	Knapweed	{Chrysomelidae} <i>Sphaeroderma testaceum</i> <i>Cassida vibex</i> (Tortoise Beetle) {Curculionidae} <i>Apion onopordi</i> <i>Lixus algirus</i> <i>Rhynchaenus pratensis</i>
<i>Daucus carota</i>	Wild carrot	{Curculionidae} <i>Hypera pastinacae</i> <i>Calosirus terminatus</i>
<i>Leucanthemum vulgare</i>	Ox-eye daisy	{Chrysomelidae} <i>Longitarsus succineus</i> {Curculionidae} <i>Apion stolidum</i> <i>Microplontus campestris</i>
<i>Lotus corniculatus</i>	Eggs and bacon	{Bruchidae} <i>Bruchus loti</i> <i>Bruchidius cisti</i> {Curculionidae} <i>Apion loti</i> <i>Sitona puncticollis</i> <i>Sitona lineellus</i> <i>Sitona waterhousei</i> <i>Hypera suspiciosa</i> <i>Hypera plantaginis</i> <i>Pachytychius haematocephalus</i> <i>Tychius flavicollis</i> {Nitidulidae} <i>Meligethes erythropus</i>
<i>Lychnis flos-cuculi</i>	Ragged robin	-
<i>Ranunculus repens</i>	Buttercup	{Chrysomelidae} <i>Hydrothassa glabra</i> <i>Hydrothassa marginella</i> <i>Phyllotreta vittata</i> {Curculionidae} <i>Leiosoma deflexum</i>
<i>Taraxacum officinale</i>	Dandelion	{Curculionidae} <i>Glocianus pilosellus</i> <i>Glocianus punctiger</i>
<i>Trifolium repens</i>	White clover	{Chrysomelidae} <i>Longitarsus atricillus</i>

		{Curculionidae} <i>Apion pubescens</i> <i>Apion seniculus</i> <i>Apion curtisii</i> <i>Apion dichroum</i> <i>Apion difforme</i> <i>Apion schoenherri</i> <i>Apion trifolii</i> (Clover Seed Weevil) <i>Apion varipes</i> <i>Apion virens</i> <i>Sitona lineellus</i> <i>Sitona hispidulus</i> (Clover Weevil) <i>Sitona humeralis</i> <i>Sitona lepidus</i> <i>Sitona lineatus</i> (Pea Weevil) <i>Sitona puncticollis</i> <i>Sitona sulcifrons</i> <i>Hypera postica</i> (Clover Leaf Weevil) <i>Hypera punctata</i> <i>Tychius lineatulus</i> <i>Tychius polylineatus</i> <i>Tychus pusillus</i> <i>Tychus stephensi</i> <i>Tychus tibialis</i> <i>Miccotrogus picirostris</i> {Nitidulidae} <i>Meligethes nigrescens</i>
<i>Vicia sativa</i>	Common vetch	{Bruchidae} <i>Bruchus atomarius</i> <i>Bruchus rufimanus</i> (Bean Beetle) <i>Bruchus rufipes</i> {Chrysomelidae} <i>Derocrepis rufipes</i> {Curculionidae} <i>Apion aethiops</i> <i>Apion afer</i> <i>Apion pomonae</i> <i>Sitona ambiguus</i> <i>Sitona lineatus</i> (Pea Weevil) <i>Sitona puncticollis</i> <i>Sitona sulcifrons</i> <i>Sitona suturalis</i> <i>Tychius quinquepunctatus</i>
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	{Chrysomelidae} <i>Lema cyanella</i> <i>Lema melanopa</i> (Cereal Leaf Beetle)^{1,2}

Appendix 3.5 Utilisation of the selected flora by plant-bugs (Hemiptera, Heteroptera) as adult and/or larval food-plants. Compiled from: ¹Edwards and Heath 1964; otherwise Southwood and Leston 1959 (potential pest species indicated in bold type, see Appendix 3.7).

Plant species	Common name	Insect taxon/species (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	{Pentatomidae} <i>Palomena prasina</i> (Green Shieldbug) <i>Pentatoma rufipes</i> (Forest Bug) {Miridae} <i>Phylus coryli</i> <i>Psallus salicellus</i> <i>Campyloneura virgula</i> <i>Malacocoris chlorizans</i> (Delicate Apple-capsid) <i>Pantilius tunicatus</i>
<i>Crataegus monogyna</i>	Hawthorn	{Acanthosomidae} <i>Acanthosoma haemorrhoidale</i> (Hawthorn Shieldbug) {Miridae} <i>Psallus ambiguus</i> <i>Psallus perrisi</i> <i>Atractotomus mali</i> <i>Campyloneura virgula</i> <i>Lygocoris pabulinus</i> (Common Green Capsid) <i>Miris striatus</i>
<i>Tamus communis</i>	Black bryony	-
Annual weed species		
<i>Centaurea cyanus</i>	Cornflower	-
<i>Chenopodium album</i>	Fathen	{Lygaeidae} <i>Peritrechus lundi</i> {Piesmidae} <i>Piesma maculatum</i> {Miridae} <i>Orthotylus flavosparsus</i> <i>Lygus rugulipennis</i> (Tarnished Plant-bug) <i>Lygocoris pabulinus</i> (Common Green Capsid)
<i>Chrysanthemum segetum</i>	Corn marigold	-
<i>Galium aparine</i>	Cleavers	{Cydnidae} <i>Legnotus limbosus</i> {Miridae} <i>Polymerus nigrinus</i>
<i>Matricaria recutita</i>	Mayweed	-
<i>Papaver rhoeas</i>	Common	-

	poppy	
<i>Polygonum aviculare</i>	Knotgrass	{Coreidae} <i>Coreus marginatus</i> {Berytidae} <i>Cymus claviculus</i>
Woodland/hedge ground flora		
<i>Alliaria petiolata</i>	Hedge garlic	{Pentatomidae} <i>Eurydema oleracea</i> (Brassica Bug)
<i>Arum maculatum</i>	Lords-and-Ladies	-
<i>Digitalis purpurea</i>	Foxglove	{Miridae} <i>Dicyphus pallicornis</i>
<i>Galium mollugo</i>	Hedge-bedstraw	{Cydniidae} <i>Legnotus limbosus</i> {Miridae} <i>Polymerus unifasciatus</i> <i>Charagochilus gyllenhali</i>
<i>Hyacinthoides non-scripta</i>	Bluebell	-
<i>Lamiastrum galeobdolon</i>	Yellow archangel	-
<i>Lamium album</i>	White dead-nettle	{Cydniidae} <i>Sehirus bicolor</i> (Pied Shieldbug) {Miridae} <i>Lygocoris pabulinus</i> (Common Green Capsid)
<i>Primula vulgaris</i>	Primrose	-
<i>Vicia sepium</i>	Bush vetch	-
Tall herbs		
<i>Carduus acanthoides</i>	Wetted thistle	{Miridae} <i>Calocoris norvegicus</i> (Potato Capsid)
<i>Cirsium arvense</i>	Creeping thistle	{Tingidae} <i>Tingis ampliata</i> (Creeping Thistle Lacebug) {Miridae} <i>Lygocoris pabulinus</i> (Common Green Capsid) <i>Lygocoris spinolai</i> <i>Calcoris norvegicus</i> (Potato Capsid)
<i>Convolvulus arvensis</i>	Field bindweed	<i>Lygocoris pabulinus</i> (Common Green Capsid)¹
<i>Dipsacus fullonum</i>	Teasel	-
<i>Chamerion angustifolium</i>	Willowherb	{Miridae} <i>Lygocoris pabulinus</i> (Common Green Capsid)
<i>Heracleum sphondylium</i>	Hogweed	{Miridae} <i>Orthops campestris</i>

		<i>Orthops kalmi</i>
<i>Torilis japonica</i>	Hedge parsley	{Miridae} <i>Orthops campestris</i> <i>Orthops kalmi</i>
<i>Urtica dioica</i>	Nettle	{Lygaeidae} <i>Heterogaster urticae</i> (Nettle Groundbug) <i>Scolopostethus affinis</i> <i>Scolopostethus thomsoni</i> {Miridae} <i>Orthonotus rufifrons</i> <i>Plagiognathus arbustorum</i> <i>Dicyphus errans</i> <i>Lygus rugulipennis</i> (Tarnished Plant-bug) <i>Liocoris tripustulatus</i> <i>Lygocoris pabulinus</i> (Common Green Capsid) <i>Lygocoris spinolai</i> <i>Lygocoris lucorum</i> <i>Calocoris fulvomaculatus</i> (Hop Capsid) <i>Calocoris sexguttatus</i> <i>Calocoris major</i> <i>Calcoris norvegicus</i> (Potato Capsid)
Grassland		
<i>Centaurea nigra</i>	Knapweed	{Miridae} <i>Oncotylus viridiflavus</i> <i>Phytocoris varipes</i>
<i>Daucus carota</i>	Wild carrot	{Miridae} <i>Orthops campestris</i> <i>Orthops kalmi</i> <i>Calcoris norvegicus</i> (Potato Capsid)
<i>Leucanthemum vulgare</i>	Ox-eye daisy	{Tingidae} <i>Catoplatus fabricii</i> {Miridae} <i>Calocoris roseomaculatus</i>
<i>Lotus corniculatus</i>	Eggs and bacon	{Miridae} <i>Calocoris roseomaculatus</i>
<i>Lychnis flos-cuculi</i>	Ragged robin	-
<i>Ranunculus repens</i>	Buttercup	-
<i>Taraxacum officinale</i>	Dandelion	{Miridae} <i>Lygocoris pabulinus</i> (Common Green Capsid)
<i>Trifolium repens</i>	White clover	{Berytidae} <i>Berytinus minor</i> (Stilt Bug) {Miridae} <i>Chlamydatus pullus</i> <i>Chlamydatus saltitans</i> <i>Lygus rugulipennis</i> (Tarnished Plantbug) <i>Calocoris roseomaculatus</i> <i>Calcoris norvegicus</i> (Potato Capsid)

		<i>Phytocoris varipes</i> <i>Adelphocoris lineolatus</i> (Lucerne Plantbug)
<i>Vicia sativa</i>	Common vetch	-
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	{Pentatomidae} <i>Aelia acuminata</i> (Bishop's Mitre) {Rhopalidae} <i>Myrmus miriformis</i> {Miridae} <i>Lopus decolor</i> <i>Stenotus binotatus</i> <i>Phytocoris varipes</i> <i>Capsus ater</i> <i>Stenodema calcaratum</i> <i>Stenodema laevigatum</i> <i>Notostira elongata</i> <i>Trigonotylus ruficornis</i> <i>Leptopterna ferrugata</i> <i>Leptopterna dolabrata</i> (Meadow Plantbug)

Appendix 3.6 Utilisation of the selected flora by flies (Diptera) as larval food-plants. Compiled from: ¹Barnes 1946-56; ²Coe, Freeman et al. 1950; ³Coe 1953; ⁴Colyer and Hammond 1968; ⁵Edwards and Heath 1964; ⁶Nijveldt 1969; ⁷Smith 1931; ⁸Spencer 1972; ⁹White 1988 (potential pest species indicated in bold type, see Appendix 3.7).

Plant species	Common name	Insect taxon/species (Common name)
Trees, shrubs and climbers		
<i>Corylus avellana</i>	Hazel	{Cecidomyiidae} <i>Contarina corylina</i> ¹ <i>Contarina coryli</i> ¹ <i>Mikomyia coryli</i> ¹ <i>Oligotrophus tympanifex</i> ¹
<i>Crataegus monogyna</i>	Hawthorn	{Agromyzidae} <i>Phytobia carbonaria</i> ⁸ {Cecidomyiidae} <i>Contarina anthobia</i> ¹ <i>Dasyneura crataegi</i> (Hawthorn Button Top Midge) ¹ <i>Thomasiniana crataegi</i> (Hawthorn Stem Midge) ¹ {Tephritidae} <i>Anomoia purmunda</i> ⁹
<i>Tamus communis</i>	Black bryony	-
Annual weed species		
<i>Centaurea cyanus</i>	Cornflower	{Agromyzidae} <i>Liriomyza strigata</i> ⁸ <i>Phytomyza syngenesiae</i> ⁸ {Tephritidae} <i>Chaetorellia jaceae</i> ⁹ ? <i>Chaetostomella cylindrica</i> ⁹ ? <i>Terellia colon</i> ⁹ ? <i>Urophora quadrifasciata</i> ⁹ ?
<i>Chenopodium album</i>	Fathen	{Agromyzidae} <i>Amauromyza</i> (= <i>Cephalomyza</i>) <i>chenopodivora</i> ⁸ {Anthomyiidae} <i>Pegomya hyoscyami</i> (Mangold Fly) ^{4,7}
<i>Chrysanthemum segetum</i>	Corn marigold	{Agromyzidae} <i>Liriomyza tanaceti</i> ⁸
<i>Galium aparine</i>	Cleavers	{Agromyzidae} <i>Liriomyza morio</i> ⁸ <i>Paraphytomyza anteposita</i> ⁸ <i>Paraphytomyza orphana</i> ⁸ {Cecidomyiidae} <i>Dasyneura aparines</i> ⁶ <i>Dasyneura galiicola</i> ⁶
<i>Matricaria recutita</i>	Mayweed	{Agromyzidae} <i>Ophiomyia curvipalpis</i> ⁸ ?

		{Cecidomyiidae} <i>Clinorrhyncha chrysanthemi</i> ⁶
<i>Papaver rhoeas</i>	Common poppy	{Agromyzidae} <i>Phytomyza horticola</i> ⁸ {Cecidomyiidae} <i>Dasyneura papaveris</i> ^{1,6}
<i>Polygonum aviculare</i>	Knotgrass	{Cecidomyiidae} <i>Wachtliella persicariae</i> ⁶
Woodland/hedge ground flora		
<i>Alliaria petiolata</i>	Hedge garlic	{Agromyzidae} <i>Ophiomyia alliariae</i> ⁸
<i>Arum maculatum</i>	Lords-and-Ladies	-
<i>Digitalis purpurea</i>	Foxglove	{Agromyzidae} <i>Napomyza scrophulariae</i> ⁸
<i>Galium mollugo</i>	Hedge-bedstraw	{Agromyzidae} <i>Liriomyza morio</i> ⁸ <i>Ophiomyia galii</i> ⁸ <i>Paraphytomyza buhri</i> ⁸ <i>Paraphytomyza trivittata</i> ⁸
<i>Hyacinthoides non-scripta</i>	Bluebell	{Syrphidae} <i>Merodon equestris</i> (Large Bulb/Narcissus Fly) ^{3,7} <i>Eumerus</i> spp. (Lesser Bulb Flies) ³ ?
<i>Lamium galeobdolon</i>	Yellow archangel	{Agromyzidae} <i>Amauromyza</i> (= <i>Trilobomyza</i>) <i>labiatarum</i> ⁸
<i>Lamium album</i>	White dead-nettle	{Agromyzidae} <i>Agromyza flavipennis</i> ⁸ <i>Amauromyza</i> (= <i>Trilobomyza</i>) <i>labiatarum</i> ⁸ <i>Liriomyza strigata</i> ⁸ <i>Ophiomyia labiatarum</i> ⁸ {Cecidomyiidae} <i>Macrolabis lamii</i> ¹
<i>Primula vulgaris</i>	Primrose	{Agromyzidae} <i>Phytomyza primulae</i> ⁸ {Syrphidae} <i>Cheilosia antiqua</i> ³
<i>Vicia sepium</i>	Bush vetch	{Agromyzidae} <i>Agromyza felleri</i> ⁸ <i>Agromyza vicifoliae</i> ⁸ <i>Liriomyza congesta</i> ⁸ <i>Ophiomyza orbiculata</i> ⁸ <i>Phytomyza horticola</i> ⁸ {Cecidomyiidae} <i>Anabremia viciae</i> ¹ <i>Dasyneura viciae</i> (Vetch Leaf Midge) ^{1,5}
Tall herbs		

<i>Carduus acanthoides</i>	Wetted thistle	{Cecidomyiidae} <i>Dasyneura gibsoni</i> ⁶ {Tephritidae} <i>Tephritis hyoscyami</i> ⁹ <i>Terellia serratulae</i> ⁹ <i>Terellia winthemi</i> ⁹ <i>Urophora solstitialis</i> ⁹ ?
<i>Cirsium arvense</i>	Creeping thistle	{Agromyzidae} <i>Liriomyza soror</i> ⁸ <i>Melanagromyza aeneoventris</i> ⁸ <i>Phytomyza autumnalis</i> ⁸ <i>Phytomyza cirsii</i> ⁸ <i>Phytomyza syngenesiae</i> ⁸ {Cecidomyiidae} <i>Dasyneura cirsii</i> ⁶ <i>Dasyneura gibsoni</i> ⁶ {Tephritidae} <i>Tephritis cometa</i> ⁹ <i>Terellia ruficauda</i> ⁹ <i>Urophora cardui</i> ⁹ <i>Urophora stylata</i> ⁹ <i>Xyphosia miliaria</i> ⁹
<i>Convolvulus arvensis</i>	Field bindweed	-
<i>Dipsacus fullonum</i>	Teasel	{Agromyzidae} <i>Agromyza dipsaci</i> ⁸ <i>Phytomyza nigritella</i> ⁸
<i>Chamerion angustifolium</i>	Willowherb	{Cecidomyiidae} <i>Dasyneura epilobii</i> ⁶ <i>Dasyneura kiefferiana</i> ⁶
<i>Heracleum sphondylium</i>	Hogweed	{Agromyzidae} <i>Melanagraomyza angeliciphaga</i> ⁸ <i>Ophiomyia heracleivora</i> ⁸ <i>Phytomyza heracleana</i> ⁸ <i>Phytomyza sphondyliivora</i> ⁸ {Cecidomyiidae} <i>Contarinia heraclei</i> ⁶ <i>Contarinia nicolayi</i> ⁶ <i>Kiefferia pimpinellae</i> ^{1,6} <i>Lasioptera carophila</i> ^{1,6} <i>Macrolabis corrugans</i> ^{1,6} {Psilidae} <i>Psila rosae</i> (Carrot Fly) ^{4,5,7} {Tephritidae} <i>Cryptaciura rotundiventris</i> ⁹ <i>Euleia heracleii</i> (Celery Fly) ^{5,7,9}
<i>Torilis japonica</i>	Hedge parsley	{Agromyzidae} <i>Melanagraomyza angeliciphaga</i> ⁸ <i>Phytomyza chaerophylli</i> ⁸ ? {Cecidomyiidae}

		<i>Kiefferia pimpinellae</i> ¹ <i>Lasioptera carophila</i> ¹ {Tephritidae} <i>Cryptaciura rotundiventris</i> ⁹ <i>Euleia heracleii</i> (Celery Fly)^{5,9}
<i>Urtica dioica</i>	Nettle	{Agromyzidae} <i>Agromyza anthracina</i> ⁸ <i>Agromyza pseudoreptans</i> ⁸ <i>Agromyza reptans</i> ⁸ <i>Melanagromyza aenea</i> ⁸ <i>Phytomyza flavicornis</i> ⁸ {Cecidiomyiidae} <i>Clinodiplosis urticae</i> ¹ <i>Dasyneura urticae</i> ¹ <i>Dasyneura dioicae</i> ¹
Grassland		
<i>Centaurea nigra</i>	Knapweed	{Agromyzidae} <i>Liriomyza centaureae</i> ⁸ <i>Liriomyza strigata</i> ⁸ <i>Melanagromyza dettmeri</i> ⁸ <i>Napomyza hirticornis</i> ⁸ <i>Phytomyza autumnalis</i> ⁸ <i>Phytomyza syngenesiae</i> ⁸ {Tephritidae} <i>Acina corniculata</i> ⁹ ? <i>Chaetorellia jaceae</i> ⁹ <i>Chaetostomella cylindrica</i> ⁹ <i>Urophora jaceana</i> ⁹ <i>Urophora quadrifasciata</i> ⁹
<i>Daucus carota</i>	Wild carrot	{Agromyzidae} <i>Phytomyza chaerophylli</i> ⁸ {Cecidiomyiidae} <i>Kiefferia pimpinellae</i> ¹ <i>Lasioptera carophila</i> ¹ {Psilidae} <i>Psila rosae</i> (Carrot Fly)^{4,5} {Tephritidae} <i>Cryptaciura rotundiventris</i> ⁹ <i>Euleia heracleii</i> (Celery Fly)^{5,9}
<i>Leucanthemum vulgare</i>	Ox-eye daisy	{Agromyzidae} <i>Liriomyza tanacetii</i> ⁸ <i>Melanagromyza eupatorii</i> ⁸ <i>Phytomyza leucanthemi</i> ⁸ <i>Phytomyza syngenesiae</i> ⁸ {Cecidiomyiidae} <i>Clinorrhyncha leucanthemi</i> ⁶ <i>Contarina chrysanthemi</i> ⁶ <i>Dasyneura chrysanthemi</i> ⁶ <i>Rhopalomyia hypogaea</i> ^{1,6}

		{Tephritidae} <i>Oxya nebulosa</i> ⁹ <i>Tephritis neesii</i> ⁹
<i>Lotus corniculatus</i>	Eggs and bacon	{Agromyzidae} <i>Melanagromyza cunctans</i> ⁸ {Cecidomyiidae} <i>Asphondylia melanopus</i> ¹ <i>Contarina barbichei</i> ¹ <i>Contarina loti</i> (Trefoil Flower Midge) ¹ <i>Dasyneura loti</i> ¹ <i>Jaapiella loticola</i> ¹
<i>Lychnis flos-cuculi</i>	Ragged robin	{Agromyzidae} <i>Amauromyza</i> (=Trilobomyza) <i>flavifrons</i> ⁸ <i>Ophiomyia melandricaulis</i> ⁸ {Cecidomyiidae} <i>Dasyneura praticola</i> ⁶ ?
<i>Ranunculus repens</i>	Buttercup	{Agromyzidae} <i>Phytomyza cineracea</i> ⁸ <i>Phytomyza fallaciosa</i> ⁸ <i>Phytomyza notata</i> ⁸ <i>Phytomyza ranunculi</i> ⁸ {Cecidomyiidae} <i>Dasyneura ranunculi</i> ⁶ <i>Dasyneura traili</i> ⁶
<i>Taraxacum officinale</i>	Dandelion	{Agromyzidae} <i>Liriomyza strigata</i> ⁸ <i>Liriomyza taraxaci</i> ⁸ <i>Ophiomyia beckeri</i> ⁸ <i>Ophiomyza cunctata</i> ⁸ <i>Ophiomyza pulicaria</i> ⁸ <i>Phytomyza farfarella</i> ⁸ <i>Phytomyza marginella</i> ⁸ <i>Phytomyza taraxacoecis</i> ⁸ {Cecidomyiidae} <i>Cystiphora taraxaci</i> ^{1,6} {Tephritidae} <i>Trypeta immaculata</i> ⁹
<i>Trifolium repens</i>	White clover	{Agromyzidae} <i>Agromyza nana</i> ⁸ <i>Liriomyza congesta</i> ⁸ {Cecidomyiidae} <i>Dasyneura leguminicola</i> (Clover Seed Midge) ^{1,5,7} <i>Dasyneura trifolii</i> (Clover Leaf Midge) ^{1,5,6,7} {Lauxaniidae} <i>Calliopum aeneum</i> ⁴
<i>Vicia sativa</i>	Common vetch	{Agromyzidae} <i>Agromyza vicifoliae</i> ⁸ <i>Liriomyza congesta</i> ⁸

		<i>Ophiomyza orbiculata</i> ⁸ {Cecidomyiidae} <i>Dasyneura viciae</i> (Vetch Leaf Midge) ^{1,5}
Grasses		
<i>Agrostis stolonifera</i> <i>Brachypodium sylvaticum</i> <i>Dactylis glomerata</i> <i>Festuca rubra</i>	Creeping bent False brome Cocksfoot Red fescue	{Agromyzidae} <i>Agromyza cinerascens</i> ⁸ <i>Agromyza nigrella</i> ⁸ <i>Agromyza rondensis</i> ⁸ <i>Cerodontha</i> (=Phytagromyza) <i>flavocingulata</i> ⁸ <i>Cerodontha</i> (=Poemyza) <i>pygmaea</i> ⁸ <i>Liriomyza flaveola</i> ⁸ <i>Phytomyza nigra</i> ⁸ {Anthomyiidae} <i>Hylemya</i> spp. ⁴ ? <i>Phorbia</i> spp. ^{4,5} {Bibionidae} <i>Bibio marci</i> (St. Mark's Fly) ⁴ <i>Dilophus febrilis</i> (Fever Fly) ⁴ {Cecidomyiidae} <i>Contarina dactylidis</i> (Cocksfoot Midge) ^{1,5} <i>Contarina festucae</i> ¹ <i>Dasyneura dactylidis</i> ¹ <i>Dasyneura festucae</i> ¹ <i>Hybolasioptera cerealis</i> ¹ <i>Lasioptera graminicola</i> ¹ <i>Mayetiola brachypodii</i> (=Chortomyia <i>hellwigi</i>) ¹ <i>Mayetiola dactylidis</i> ¹ <i>Sitodiplosis dactylidis</i> ¹ <i>Stenodiplosis geniculati</i> ¹ {Chloropidae} <i>Elachiptera</i> spp. ⁴ <i>Meromyza saltatrix</i> ⁵ <i>Oscinella frit</i> (Frit Fly) ^{4,5,7} {Opomyzidae} <i>Geomyza</i> spp. (Grass and Cereal Flies) ^{4,5} <i>Opomyza</i> spp. (Grass and Cereal Flies) ^{4,5} {Tipulidae} <i>Nephrotoma</i> spp. (Spotted Crane Flies) ^{2,5,7} <i>Tipula</i> spp. (Common Crane Flies) ^{2,5,7}

Appendix 3.7 Potential insect pests, showing their wild and cultivated host-plants.

Insect taxon/species	Wild host	Cultivated hosts (crops)
Lepidoptera		
<i>Acronicta psi</i> (Grey Dagger)	<i>Crataegus monogyna</i> (and many other trees)	Apples, plums, some soft fruits
<i>Agrotis exclamationis</i> (Heart and Dart)	<i>Chenopodium album</i> (and many other plants)	Sugar beet, turnips, swedes, potatoes and other vegetable crops
<i>Dasychira</i> spp. (Tussocks)	<i>Corylus avellana</i> <i>Crataegus monogyna</i> (and many other trees)	Apples, hops
<i>Diloba caeruleocephala</i> (Figure of Eight)	<i>Crataegus monogyna</i> (and many other trees)	Apples, plums, cherries
<i>Euproctis</i> spp. (Brown- & Yellow-tails)	<i>Crataegus monogyna</i> (and many other trees)	Apples, pears, plums, cherries, some soft fruits, hops
<i>Mesapamea secalis</i> (Common Rustic)	Gramineae (many species)	Cereals
<i>Orgyia</i> spp. (Vapourers)	<i>Corylus avellana</i> <i>Crataegus monogyna</i> (and many other trees)	Apples, pears, plums, cherries, some soft fruits, hops
<i>Phalera bucephala</i> (Buff-tip)	<i>Corylus avellana</i> (and many other trees)	Apples, pears, plums, cherries, some soft fruits
Symphyla (Hymenoptera)		
<i>Ametastegia glabrata</i> (Dock Sawfly)	<i>Chenopodium album</i> <i>Polygonum aviculare</i> (and other Polygonaceae)	Apples
<i>Neurotoma saltuum</i> (Social Pear Sawfly)	<i>Crataegus monogyna</i> (and other Rosaceae)	Pears, plums, cherries
<i>Priophorus pallipes</i> (Plum Leaf Sawfly)	<i>Crataegus monogyna</i> (and other Rosaceae)	Pears, plums
Coleoptera		
<i>Aclypea opaca</i> (Beet Carrion Beetle)	<i>Chenopodium album</i> (and other Chenopodiaceae)	Mangolds, sugar beet
<i>Apion trifolii</i> (Clover Seed Weevil)	<i>Trifolium repens</i> (and other Leguminosae)	Clovers
<i>Bruchus rufimanus</i> (Bean	<i>Vicia sativa</i>	Beans

Beetle)	<i>Vicia sepium</i>	
<i>Cassida nebulosa</i> (Tortoise Beetle)	<i>Chenopodium album</i>	Sugar beet
<i>Chaetocnema concinna</i> (Mangold Flea Beetle)	<i>Polygonum aviculare</i> (and other Polygonaceae)	Mangolds, sugar beet
<i>Crepidodera ferruginea</i> (Wheat Flea Beetle)	<i>Carduus acanthoides</i> <i>Cirsium arvense</i> <i>Urtica dioica</i> (and many other plants)	Cereals (mainly wheat)
<i>Hypera postica</i> (Clover Leaf Weevil)	<i>Trifolium repens</i> (and other Leguminosae)	Clovers, lucerne, vetches
<i>Lema melanopa</i> (Cereal Leaf Beetle)	Gramineae (many species)	Cereals
<i>Magdalis barbicornis</i> (Pear Weevil)	<i>Crataegus monogyna</i>	Pears
<i>Rhynchites caeruleus</i> (Apple Twig Cutter)	<i>Crataegus monogyna</i> (and other tree Rosaceae)	Apples, pears, plums
<i>Scolytus mali</i> (Large Fruit Bark Beetle)	<i>Crataegus monogyna</i>	Apples, pears, plums
<i>Sitona hispidulus</i> (Clover Weevil)	<i>Trifolium repens</i>	Clovers, lucerne
<i>Sitona lineatus</i> (Pea Weevil) <i>Sitona humeralis</i> <i>Sitona lepidus</i> <i>Sitona puncticollis</i> <i>Sitona sulcifrons</i>	<i>Lotus corniculatus</i> <i>Trifolium repens</i> <i>Vicia sativa</i> <i>Vicia sepium</i> (and other Leguminosae)	Peas, beans, lucerne, clovers, vetches, sugar beet
Heteroptera (Hemiptera)		
<i>Calocoris fulvomaculatus</i> (Hop Capsid)	<i>Urtica dioica</i> (and many Rosaceae)	Hops
<i>Calcoris norvegicus</i> (Potato Capsid)	<i>Carduus acanthoides</i> <i>Cirsium arvense</i> <i>Daucus carota</i> <i>Trifolium repens</i> <i>Urtica dioica</i> (and many other plants)	Potatoes
<i>Lygocoris pabulinus</i> (Common Green Capsid)	<i>Chamerion angustifolium</i> <i>Chenopodium album</i> <i>Cirsium arvense</i> <i>Convolvulus arvensis</i> <i>Crataegus monogyna</i> <i>Lamium album</i>	Potatoes, sugar beet, swedes, beans, currants, gooseberries and other crops

	<i>Taraxacum officinale</i> <i>Urtica dioica</i> (and many other plants)	
<i>Lygus rugulipennis</i> (Tarnished Plant-bug)	<i>Chenopodium album</i> <i>Trifolium repens</i> <i>Urtica dioica</i> (and many other plants)	Potatoes, sugar beet, clover, lucerne, celery, brassicas
Diptera		
<i>Bibio marci</i> (St. Mark's Fly)	Gramineae (many species)	Grasses and arable crops
<i>Contarina dactylidis</i> (Cocksfoot Midge)	<i>Dactylis glomerata</i>	Cocksfoot
<i>Dasyneura leguminicola</i> (Clover Seed Midge)	<i>Trifolium repens</i> (and other <i>Trifolium</i> spp.)	White clover, red clover, alsike clover, zig-zag clover
<i>Dasyneura trifolii</i> (Clover Leaf Midge)	<i>Trifolium repens</i> (and other <i>Trifolium</i> spp.)	White clover, red clover, strawberry clover, zig-zag clover
<i>Dasyneura viciae</i> (Vetch Leaf Midge)	<i>Vicia sativa</i> <i>Vicia sepium</i>	Common vetch, narrow-leaved vetch, bush vetch
<i>Dilophus febrilis</i> (Fever Fly)	Gramineae (many species)	Grasses and arable crops
<i>Euleia heracleii</i> (Celery Fly)	<i>Daucus carota</i> <i>Heracleum sphondylium</i> <i>Torilis japonica</i> (and other Umbelliferae and some Asteraceae)	Celery, parsnips
<i>Eumerus</i> spp. (Lesser Bulb Flies)	<i>Hyacinthoides non-scripta</i> ? (and other Liliaceae)	Narcissus bulbs
<i>Geomyza tripunctata</i> (Grass and Cereal Fly)	Gramineae (several species)	Grasses and some cereals (especially wheat)
<i>Merodon equestris</i> (Large Bulb Fly)	<i>Hyacinthoides non-scripta</i> (and other Liliaceae)	Narcissus bulbs
<i>Meromyza saltatrix</i>	Gramineae (many species)	Grasses, cereals
<i>Nephrotoma</i> spp. (Spotted Crane Flies)	Gramineae (many species)	Grasses, cereals, turnips, mangolds, beet, potatoes, lettuce, brassicas
<i>Opomyza florum</i> (Grass and Cereal Fly)	Gramineae (many species)	Grasses and some cereals (especially wheat)
<i>Pegomya hyoscyami</i> (Mangold Fly)	<i>Chenopodium album</i> (and many other	mangolds, sugar beet, spinach

	plants)	
<i>Phorbia genitalis</i>	Gramineae (many species)	Grasses, cereals
<i>Psila rosae</i> (Carrot Fly)	<i>Daucus carota</i> <i>Heracleum sphondylium</i> (and other Umbelliferae)	Carrots, celery, parsley, parsnips, turnips
<i>Tipula</i> spp. (Common Crane Flies)	Gramineae (many species)	Grasses, cereals, turnips, mangolds, beet, potatoes, lettuce, brassicas, hops, raspberries, strawberries
<i>Oscinella frit</i> (Frit Fly)	Gramineae (several species)	Grasses, cereals.

Appendix 3.8 (cont) Utilisation of invertebrates in the diets of 37 species of birds commonly found on lowland farms. Compiled from Wilson *et al.* 1996. Blank=not recorded, P=present in the diet, I=important. Bird species codes refer to those given in Appendix 3.1. Shaded bird species are included in the UK Biodiversity Action Plans and listed in the in the UK Biodiversity Group Reports (Anon 1995 & 1998).

	Q .	R L	P .	P H	C D	S D	W P	T D	T N	L .	G P	H M	S M	S L	M P	Y W	P W	B .	S T	M .	R .	D .	W R	S F	S G	S .	H S	T S	C H	L I G R B F G O Y . C L R B C B F F R E
Acrididae			I	P					I	P	P		P		P	P	P	P	P	P				P	P	I	P	P	P	I P I
Tettigoniidae				P					P	I	P							P	P		P	P		P	P		P	P		P I P I

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	Q .	R L	P .	P H	C D	S D	W P	T D	T N	L .	G P	H M	S M	S L	M P	Y W	P W	B .	S T	M .	R .	D .	W R	S F	S G	S .	H S	T S	C H	L I G R B F G O Y . C L R B C B F F R E
PSOCOPTERA												P	P	P	P							P		P			P	P		
THYSANOPTERA														P							P		P			P	P	P		
NEUROPTERA		P		P						P		P	P	P	P	P	P	P	P		P	P	P	P	P		P	P	P	P
MECOPTERA														P	P			P	P			P	P	P			P	P	P	

Tipulidae			I	I					I	I	I	P	P	P	I	P	I	P	P		P	P	P	P	I	I	P		I	P	I	I	I	
Culicidae												P	P	P	P	P	P						P	P	P		P		P		P	P	P	
Stratiomyidae												P	P	P	P			P						P	P	I						P	P	P
Tabanidae										P	P	P	P	P	P	P	P							P	P		P		P		P	P	P	P
Sciaridae													P	P																				
Sepsidae												P	P	P		P	P								P									

Appendix 3.8 (cont) Utilisation of invertebrates in the diets of 37 species of birds commonly found on lowland farms. Compiled from Wilson *et al.* 1996. Blank=not recorded, P=present in the diet, I=important. Bird species codes refer to those given in Appendix 3.1. Shaded bird species are included in the UK Biodiversity Action Plans and listed in the in the UK Biodiversity Group Reports (Anon 1995 & 1998).

	Q .	R L	P .	P H	C D	S D	W P	T D	T N	L .	G P	H M	S M	S L	M P	Y W	P W	B .	S T	M .	R .	D .	W R	S F	S G	S .	H S	T S	C H	L I G R B F G O Y . C L R B C B F F R E	
Mycetophoridae												P	P	P		P	P														
Lonchophoridae												P	P	P		P	P								P						
Agromyzidae												P	P	P		P	P														
Opomyzidae												P	P	P		P	P														
Phoridae												P	P	P																	
Anthomyzidae												P		P											P						
Therevidae														P										P	P				P	P	

Appendix 3.8 (cont) Utilisation of invertebrates in the diets of 37 species of birds commonly found on lowland farms. Compiled from Wilson *et al.* 1996. Blank=not recorded, P=present in the diet, I=important. Bird species codes refer to those given in Appendix 3.1. Shaded bird species are included in the UK Biodiversity Action Plans and listed in the in the UK Biodiversity Group Reports (Anon 1995 & 1998).

	Q .	R L	P .	P H	C D	S D	W P	T D	T N	L .	G P	H M	S M	S L	M P	Y W	P W	B .	S T	M .	R .	D .	W R	S F	S G	S .	H S	T S	C H	L I G R B F G O Y . C L R B C B F F R E	
Cynipidae												P	P	P		P		P						P		P	P				P P P
Ichneumonidae		P	P	P								I	I	I	I	P	P	P	P					I	P	P	P	P	P		P
Formicidae	I	I	I	I	P		P		I	I	I	P	P	P	P	I	I	P	P	P	I	P	I	I	I	P	P	P	I		P P P P P

Appendix 3.8 (cont) Utilisation of invertebrates in the diets of 37 species of birds commonly found on lowland farms. Compiled from Wilson *et al.* 1996. Blank=not recorded, P=present in the diet, I=important. Bird species codes refer to those given in Appendix 3.1. Shaded bird species are included in the UK Biodiversity Action Plans and listed in the in the UK Biodiversity Group Reports (Anon 1995 & 1998).

	Q	R	P	P	C	S	W	T	T	L	G	H	S	S	M	Y	P	B	S	M	R	D	W	S	S	S	H	T	C	L	
	.	L	.	H	D	D	P	D	N	.	P	M	M	L	P	W	W	.	T	.	.	.	R	F	G	.	S	S	H	I	
Chrysomelidae	P	P	I	P		P				P	I	P	P	P	P	I	I	P	P		I	P	P	P	P	P	I	P	P	P	I
Meloidae				P																				P							P
Buprestidae				P					I	P														P	P			P			P

