

**Table 1**  
**Usage of Insecticides for the Control of Aphid Vectors**  
**of Virus Diseases of Selected Arable Crops in 1992 (Principal Usage)**

Crop	Disease	Area treated, ha	Amount applied, tons a.i.
Sugar beet	Virus yellows <sup>a</sup>	196,346 <sup>b</sup>	27.1
Wheat	Barley yellow dwarf	1,604,919 <sup>c</sup>	127.46
Winter barley	Barley yellow dwarf	539,544 <sup>c</sup>	11.68
Oilseed rape	Beet western yellows	15,045 <sup>d</sup>	0.88
Ware potatoes	Potato viruses <sup>e</sup>	192,113	24.01
Seed potatoes	Potato viruses <sup>e</sup>	69,137	9.07
Total	All viruses	2,617,104	199.32

<sup>a</sup>Caused by beet mild yellowing virus (syn. beet western yellows virus) and beet yellows virus.

<sup>b</sup>Excludes aldicarb but includes tefluthrin.

<sup>c</sup>Excludes all seed treatments.

<sup>d</sup>Includes only named insecticides where aphid control specified.

<sup>e</sup>Principally potato leaf roll virus.

uptake of IPM (integrated pest management) strategies. A good example of the latter would be the possible increase in the use of biological control, for aphid and other pests, in glasshouse crops if the thrips vectors of tomato-spotted wilt virus (TSWV) were made less important. Controlling the virus directly through transgenic, resistant crops rather than spraying to control the vector would be one such mechanism to achieve this end. It is also a stated aim of the ministry to rationalize pesticide usage where possible.

A list of pesticide use on arable crops in the United Kingdom for 1992 (3), which can be directly attributed to the control of insect vectors of important viral diseases, is shown in **Table 1**. The total treated area of arable crops in the United Kingdom receiving insecticide amounted to some 3,584,554 ha in 1992; arable crops account for 92% of all pesticide use in the UK. Hence the amount of insecticide specifically used to control plant viruses (**Table 1**) represents at least 67% of all insecticides used in United Kingdom agriculture (crop protection) and includes chemicals of great topical concern in relation to the environment. A similar pattern of use was seen in corresponding figures for insecticide use in the United Kingdom in 1994 (4), although the percentage of use on arable crops, relating principally to the control of plant virus vectors, dropped to 42% (1,330,590 ha) of the total applied (3,114,885 ha).

A number of other plant virus diseases, particularly of horticultural crops, are controlled with insecticides and nematicides; but either their use is on a very small scale (compared to the use on arable crops) or virus control is not