Table 1
Further Examples of Effective Crossprotection Mechanisms

Plant host	Virus	Ref.
Vanilla	Vanilla necrosis potyvirus	***43***
Cucurbits	Water melon mosaic virus	***44***
Soybean	Soybean mosaic virus	***45***
Tomato	Tomato spotted wilt virus	***46***
Plum	Plum pox virus	***47***
Oat	Barley yellow dwarf virus	***48***
Pepper	Pepper severe mosaic virus	***49***
Peach	Tomato ringspot virus	***50***
Tomato	Tomato aspermy virus	***51***
Apple	Apple mosaic virus	***52***
Brussels sprout	Cauliflower mosaic virus	***53***

A mild variant of the virus selected from a severe strain in France has been used for crop protection successfully in various cucurbits grown in a number of countries ***(39–41)***. The mild strain causes a slight depression of yield and can delay flowering in early season crops ***(42)***, but clearly offers considerable commercial benefits.

3.7. Other Examples

There are many other examples of crops and viruses in which apparently effective crossprotection has been demonstrated in laboratory/greenhouse experiments or in field trials. For completeness, a number of these are listed in **Table 1**. Generally, however, these examples do not seem to have been carried forward into practical use in crop protection. Possible reasons for this are explored in the next section.

4. Disadvantages and Advantages of Crossprotection

Generally, the comparatively low uptake of crossprotection in agricultural systems suggests that the disadvantages are seen to outweigh the advantages. There is a sensible reluctance to introduce viruses into the agricultural ecosystem, because of possible deleterious consequences, and, in general, crossprotection has only been used when other measures, such as resistance, have been unavailable, where virus eradication has failed and the target virus has become endemic, or where the release could be carried out in controlled conditions, such as in greenhouse-grown crops.

A number of potential problems with crossprotection have been considered in earlier reviews ***(13,14,17)***. These are considered briefly here.