

# Preventing the introduction and spread of ulluco viruses

This is a guide for those who are currently growing, or were proposing to grow, ulluco.

The key points are:

- Non-native viruses have been identified in ulluco being grown in England
- These viruses have the potential to spread to potato and other crops, and cause damage in these crops
- We are strongly advising against the further import and growing of ulluco in the UK, pending further assessment of the risks from this crop
- If ulluco is currently being grown, good biosecurity practice is recommended to prevent the spread of potentially damaging viruses

## Background

Ulluco (*Ullucus tuberosus*) is an Andean root tuber in the family Basellaceae. It originates in South America, and is found in Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela. There are many varieties of ulluco, which produce vividly coloured tubers (see Figure 1). These tubers are edible and are widely consumed in the Andean region, second only to potato.



**Figure 1.** Different colour forms of ulluco. Image by Nzfauna, distributed under a [CC BY-SA 3.0 licence](https://creativecommons.org/licenses/by-sa/3.0/).

Imported ulluco was recently traced by the Animal and Plant Health Agency and was found to be infected with harmful non-native pests. These included a novel Tymovirus of Andean origin similar to Andean potato latent virus (which is a regulated pest), as well as a host of other non-native viruses. These viruses have the potential to spread to other crops, with the main crops of concern being potatoes and other crops of the Solanaceae family (e.g. tomatoes, aubergines and peppers). Species from the families Amaranthaceae, which now includes the Chenopodiaceae (e.g. spinach, beet and quinoa), and Cucurbitaceae (e.g. cucumber, courgettes, marrows or squashes) may also be at risk. However, these viruses pose no risk to human or animal health.

While ulluco can be imported legitimately from outside the EU with a phytosanitary certificate and moved within the EU for sale and growing, given the uncertainty that has been raised following the case above, we are recommending that commercial and amateur growers should avoid importing and growing this crop pending further assessment of the risks, including consideration of whether new regulations should be introduced to control future imports and movements.

## Biosecurity guidance

If ulluco is currently being grown or stored, we advise the following to prevent the spread of the above viruses:

- Ulluco should only be harvested for personal consumption and should not be sold or transferred to other sites (and all tubers should be removed from the soil)
- Tubers of ulluco should not be saved for planting in the following year to avoid carry over of any viruses harboured in the tubers
- It is possible for the viruses to spread by contact, therefore any potatoes and species of Amaranthaceae, Cucurbitaceae and Solanaceae, which you have grown, should also only be harvested for personal consumption and any seed/tubers should not be saved for planting in the following year
- Any remaining waste from the vegetables, including peelings, can be disposed of in general waste bins to go to landfill and should not be composted
- Remaining plant material (leaves and stems) of ulluco, should be destroyed following harvest, either by incineration (burning on site) or via deep burial (to a minimum of 2 m) in accordance with waste regulations, or bagged and disposed of with waste for land fill
- Remaining plant material of potato and species of Amaranthaceae, Cucurbitaceae and Solanaceae, which you have grown, should be destroyed as for the ulluco plant material in the preceding point
- The planting area should be cleared of all plant material, including weeds

- If any ulluco and potato plants regrow in the following year, they should be destroyed as for the plant material above
- The viruses are potentially transmitted mechanically (on people, clothes, equipment etc.), so hygiene best practice should be followed:
  - Wash hands with soap before and after working on a crop
  - Clean any tools and equipment which have been in contact with ulluco thoroughly to remove all plant material and soil

## Advisory Information

If you have any further queries about ulluco, import requirements or plant health controls, please contact your relevant plant health authority:

For **England and Wales**, contact your local **APHA Plant Health and Seeds Inspector** or the **PHSI Headquarters**, Sand Hutton, York. Tel: 01904 405138  
Email: [planthealth.info@apha.gsi.gov.uk](mailto:planthealth.info@apha.gsi.gov.uk)

For **Scotland**, contact the **Scottish Government's Horticulture and Marketing Unit**:  
Email: [hort.marketing@gov.scot](mailto:hort.marketing@gov.scot)

For **Northern Ireland**, contact the **DAERA Plant Health Inspection Branch**:  
Telephone 0300 2007847 Email: [planthealth@daera-ni.gov.uk](mailto:planthealth@daera-ni.gov.uk)  
For additional information on UK Plant Health please see:

For additional information on UK Plant Health please see:  
<https://secure.fera.defra.gov.uk/phiw/riskRegister/>  
<https://www.gov.uk/plant-health-controls>  
<https://www.daera-ni.gov.uk>

## Author

**Matthew Everatt (Defra)**

**October 2017**

© Crown copyright