

Achocha as an alternative crop

Background

Achocha (*Cyclanthera pedata*) is a cucurbit crop thought to originate from South America ¹. It is also known as Bolivian cucumber, caigua, caihua, stuffing gourd, slipper gourd or climbing cucumber. It is commonly found grown at altitude in the Andes in Peru and Bolivia but it is also widely cultivated throughout South America, Central America, Mexico, and the Caribbean. Achocha produces small dark green palmate leaves and is best grown as a vertical vine, which is quite vigorous and can reach 2m high. It produces small white flowers which are highly attractive to pollinators and



beneficial insects that then go on to form large numbers of small hollow fruits. They are commonly described as having the texture of a pepper and the taste of a cucumber. Younger fruits can be eaten raw, like a cucumber whilst the older fruits are often cooked baked and stuffed with the seeds removed.² There are two main types of achocha: 'Fat Baby' (*Cyclanthera brachystachya*) grows single fruits that are covered in soft, fleshy spines. 'Lady's slipper' (*Cyclanthera pedata*) sets smooth fruits in pairs. We are providing 'Fat baby' here.

Aims of this experiment

We would like to see how feasible it is to grow this as an outdoor UK crop as an alternative to produce that might be grown in a heated glasshouse or imported. Is it dependable everywhere in the UK? How do people rate its taste?

What we need from you:

Space: 1.2m x 1.2 m plot.

Growing care: sowing, planting out and watering the plots

Measurements:

- Record date of first flowering
- Record date first pods form
- Estimate how much you harvested
- Cook it and tell us what you think

Included in this pack:

- Instructions
- Achocha seeds – type 'Fat baby'
- Recording sheets

¹ Chomicki, G., Schaefer, H., & Renner, S. S. (2020). Origin and domestication of Cucurbitaceae crops: insights from phylogenies, genomics and archaeology. *New Phytologist*, 226(5), 1240-1255.

² Popenoe, H. et al *Lost Crops of the Incas* National Academy Press 1990 ISBN 0-309-04264-X

Instructions

Sowing – Mid April

- Fill eight 3" (7 cm) pot with seed compost.
- Sow one seed in each pot to a depth of 2 cm, pointed side down
- Achocha needs warm temperatures to germinate, around 20°C, so keep in a warm place.
- Germination can take 2 weeks

Plant care

- Keep the plants in a warm light place to allow them to develop.
- Once they have developed a couple of true leaves, put the pots outside during the day to allow the plants to harden off.

Bed preparation – Early May

- Weed the bed and add compost so that it has moderate levels of fertility.
- Construct a wigwam of canes or sticks, around 2 m high, to allow the plants to climb, as if you were growing runner beans.

Planting out – Mid May

- After the danger of last frost has passed, plant out 4 of the achocha plants around your wigwam and water them in well.
- Water as necessary, and look for slugs at night. Replace any plants that get badly damaged.
- Encourage them to climb up the wigwam.
- Weed the plots as needed.

Monitoring

- Record the date of first flowering and first pod set

Harvesting – June / July onwards

- Once or twice a week, pick any pods that are 5 cm or longer.
- Count and weigh the harvest.

Taste test - August

- Take a harvest, cut open the fruits, cut in half and remove the seeds.
- Taste one half of the pods raw and record your findings using the taste testing sheet.
- Stir fry the other half in plain vegetable oil (eg sunflower, rapeseed) for 3 – 4 minutes on a medium heat, taste and record your findings.

Recording sheets

Please note that it is not necessary to provide your name and address on the recording sheet.

Many thanks for your support and for taking part in this experiment.

By far the easiest way to send the data is to enter it online. The links to the forms are on this page.

<https://www.gardenorganic.org.uk/what-we-do/citizen-science-and-research/members-experiments/achocha-as-an-alternative-crop>

You can now store results on the form as you go – it will email you a link, which you can then use to resume entering results. Please keep this email in a safe place so that you can retrieve the results. If you do lose it, then you will need to email me (experiments@gardenorganic.org.uk) and ask me for a new link.

or

you can return the record sheets to us by **31 December** at the following address:

Members' Experiment Coordinator,

Garden Organic,

Ryton on Dunsmore,

Coventry

CV8 3LG.

Electronic versions of these instructions are available in the Members' Experiment section of our website:

www.gardenorganic.org.uk/members-experiments.

We welcome good quality photos. The best ones may be published in our magazine and on social media.

Please send photos to experiments@gardenorganic.org.uk. Unfortunately, we are unable to use hard copy prints.

Part 2 – Recordings at your site

Your site

What are the first 3 letters of your postcode?

Soil type

- | | | | |
|-------------------------------------|--------------------------------------|--------------------------------|--|
| <input type="checkbox"/> Very sandy | <input type="checkbox"/> Quite sandy | <input type="checkbox"/> Silty | <input type="checkbox"/> Mix of sand, silt and clay (loam) |
| <input type="checkbox"/> Some clay | <input type="checkbox"/> Heavy clay | <input type="checkbox"/> Peaty | <input type="checkbox"/> Chalky |

Shading of plot

- | | | |
|---------------------------------|--------------------------------------|--------------------------------|
| <input type="checkbox"/> Shaded | <input type="checkbox"/> Semi shaded | <input type="checkbox"/> Sunny |
|---------------------------------|--------------------------------------|--------------------------------|

Your plants

Sowing and emergence

What date did you sow the achocha?

What date did they first emerge?

What date did you plant it out?

Flowering

Please estimate the date when the plants started flowering

Pod set

Please estimate the date when the plants started setting pods

Raw Taste test Slice the achocha in half, remove the seeds and taste

Please tick the boxes that apply to the sample					
	Very unpleasant	Unpleasant	Neutral	Pleasant	Very pleasant
Pleasantness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweetness	Not at all <input type="checkbox"/>	Slightly sweet <input type="checkbox"/>	Quite sweet <input type="checkbox"/>	Sweet <input type="checkbox"/>	Very sweet <input type="checkbox"/>
Bitterness	Not at all <input type="checkbox"/>	Slightly bitter <input type="checkbox"/>	Quite bitter <input type="checkbox"/>	Bitter <input type="checkbox"/>	Very bitter <input type="checkbox"/>
Saltiness	Not at all <input type="checkbox"/>	Slightly salty <input type="checkbox"/>	Quite salty <input type="checkbox"/>	Salty <input type="checkbox"/>	Very salty <input type="checkbox"/>
Sourness	Not at all <input type="checkbox"/>	Slightly sour <input type="checkbox"/>	Quite sour <input type="checkbox"/>	Sour <input type="checkbox"/>	Very sour <input type="checkbox"/>
Any other comments on the raw taste					

Stir fried Taste test Slice the achocha in half, remove the seeds and stir- fry over moderate heat in a neutral tasting oil for 3 - 4 minutes, then taste.

Please tick the boxes that apply to the sample					
	Very unpleasant	Unpleasant	Neutral	Pleasant	Very pleasant
Pleasantness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweetness	Not at all <input type="checkbox"/>	Slightly sweet <input type="checkbox"/>	Quite sweet <input type="checkbox"/>	Sweet <input type="checkbox"/>	Very sweet <input type="checkbox"/>
Bitterness	Not at all <input type="checkbox"/>	Slightly bitter <input type="checkbox"/>	Quite bitter <input type="checkbox"/>	Bitter <input type="checkbox"/>	Very bitter <input type="checkbox"/>
Saltiness	Not at all <input type="checkbox"/>	Slightly salty <input type="checkbox"/>	Quite salty <input type="checkbox"/>	Salty <input type="checkbox"/>	Very salty <input type="checkbox"/>
Sourness	Not at all <input type="checkbox"/>	Slightly sour <input type="checkbox"/>	Quite sour <input type="checkbox"/>	Sour <input type="checkbox"/>	Very sour <input type="checkbox"/>
Any other comments on the stir-fried taste					

Did you experience any pests or diseases when growing achocha?

Please share any ways you found to cook or prepare achocha.

Please tick the box that best applies to your experience with growing achocha					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I found achocha easy to grow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achocha was productive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoyed eating achocha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achocha could be grown as an alternative to peppers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Achocha could be grown as an alternative to cucumbers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Any other comments on achocha?

Would you grow achocha again?					
	Definitely not	Probably not	Perhaps	Quite likely	Definitely
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please answer the following questions about members experiments.

Please tick which of the boxes you think applied to your experience of taking part in the members' experiments this year.					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I enjoyed taking part in this experiment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt I learnt something new	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt I was contributing to something useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am likely to take part again	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other comments					
Any suggestions for future Members experiments					