

BEETROOT

PART ONE

What makes a beet a beet? It would seem that all beets originate from *Beta vulgaris maritima*, what we would call today “sea beet”. Through cultivation several different types of beets emerged. Some were cultivated for the use of their leaves, others for the roots and some for the sugar content. Mangolds were cultivated in the 18th century and quickly became an important source of cattle food. After the introduction of corn, it lost its popularity but is now making its comeback because of its salt tolerance, particularly in Asian countries where the soil has been ruined through irrigation and salt levels are too high for traditional crops.



Beta vulgaris maritima (sea beet)

There are several different ways of naming plants. The easiest is to use the system developed in 2004 called the ICNCP (International Code of Nomenclature for Cultivated Plants).

Beets are members of the Amaranth family and adhere to the genus of *Beta*. There are a few species of beets, but the one which interests us is *vulgaris*. The subspecies is also *vulgaris*. The ICNCP then splits them up into groups. This is a bit complicated, because a plant can belong to more than one group. A group consists of

plants with a similar trait, for example, variegated leaves, or white flowers. Here is a list of the most common groups for *Beta vulgaris vulgaris*:

- *Altissima* group: sugar beets
- *Crassa* group: mangold/fodder beet
- *Condivita* group: edible/table beet
- *Cicla* group: spinach beet/leaf beet
- *Flavescens* group: chard/swiss chard



Spinach beet



Chard

Fodder beet

These groups can also have subgroups. In the case of *Condivita* there are subgroups including: *Alba*, *Lutea*, *Rosea* and *Rubra*. The subgroups are all based on colour (white, yellow, pink and red). For table beet competition purposes we are interested in the last one: ***Beta vulgaris vulgaris condivita rubra***. Technically speaking any of the other subgroups would be allowed, but none of them seem to grow as heavy as the red ones.

As far as shape is concerned, we discern three types in the *Condivita* group: round, half long and long. The round ones are the heaviest. The long ones are used in competition for longest beetroot. The half long ones are also known as cylinder beets.

Within the subgroup of *rubra* there are many varieties and even several different colours, ranging from normal red, through purplish to almost black. Varieties include *Bull's Blood*, *Crosby's Egyptian* and *Cylindra*. Egyptian varieties are flat and not suitable for growing competitively.



Condivita Alba
"Blankoma"

Condivita Lutea
"Golden Burpee"



Condivita Rosea
"Chioggia"

Condivita Rubra
"Bull's Blood"



Condivita Rubra
"Crosby's Egyptian"

Condivita Rubra
"Cylindra"

Unfortunately certain growers, especially in Great Britain, have cross pollinated table beets

with mangolds. For this reason the GVGO has decided to discontinue the table beet class and replace it with largest beet, regardless of type.

Beta vulgaris vulgaris altissima

Early in the 17th century a French scientist discovered sugar crystals in beets, but it wasn't until 1747 that a German named Andreas Marggraf was able to distract the sugar and crystalize it. Through selection, slowly, but surely, the **sugar beet** was developed. Initially it only had 6% sugar content (*sucrose*), but these days that is as high as 17%. Sugar beets are inedible (too hard) and white.

Beta vulgaris vulgaris crassa

It's called mangel-wurzel, mangel, mangold, fodder beet, field beet and who knows what else. It's related to the sugar beet, but doesn't have the high sugar content. There are multigerm and monogerm varieties. The multigerm varieties produce more than one plant per seed and are useless for commercial growers as they need to be thinned out. The modern monogerm varieties produce one plant per seed and the roots are generally oval and easy to mechanically harvest.

Mangolds can be orange, red, white, yellow and often are combined with greenish tints. They can be oval or long. They are never dark red/purple like table beets and never round. "Mammoth Red" belongs to the *Crassa* group.

In 1974 a group of mangold hobby growers in the province of North-Holland (Netherlands) started a club called *De Dorstige Biet* (The Thirsty Beet), with the sole intent of growing the world's largest beets. In 2014 there were 274 entries. (In 1995 there were 469.) The winner weighed in at 121lbs while fifth place was still an impressive 112lbs. Club member, Piet de Goede, holds the world record at

156.6lbs (2005). Former Dutch pumpkin grower and club member Jaap Mol held the previous record at 135.8lbs (2001).



Harvesting fodder beets in The Netherlands



Fodder beet, white with green tint



Field of red fodder beets (The Netherlands)



World Record (fodder) beet (156.6 lbs)

Fodder beets are by the largest type of beets and should be used for competition purposes where there is no restriction on the type of beet. The world record was grown using a white variety called Zentaury poly. The red variety, Brigadier can also grow to extreme sizes.



Fodder beet, red

Fodder beet, yellow



Doug Stevens of the United Kingdom holds the country's record for heaviest fodder beet. It was grown in 2011 and weighed 141 lbs (63.96 kg), the 2nd largest in the world.

BEETROOT

PART TWO

GROWING GIANT BEETS

First of all, beets grown for the table beet competition must be of the *beta vulgaris vulgaris condivita* group. Giant beets (let's call them beetroots like the British do) are always dark red/purple and round. Due to their extreme weight they will square up a bit. The bottom is pretty much flat, sometimes with a taproot. Giant beetroots are never long, pointed or oval. If they don't look like these, they aren't competition beetroots.



Ian Neale, world record
(probably beet/mangold cross)



Bradley Wursten
(true table beet)

SOIL PREPARATION

Beets like sandy loam. This soil warms up faster in the spring too. The ideal PH-level is 6.5, but beets will do well in anything between 6.0 and 6.8. They will grow in lower or higher PH-levels, but won't grow as big. Lower PH-levels aren't capable of supplying enough nutrients and higher PH-levels can cause disease and other problems.

Prepare raised beds ahead of time. I grow them in ridged rows 15 feet long, three feet wide and about one foot high. First I take off a

foot of top soil, loosen up the soil underneath, add leaves, compost and peat and till it. Then I put back the soil I took off, add the amendments and till it also. Next I add a foot of soil with the same amendments on top and till it too. Beets do not like manure, so don't add it. They also don't react to mycorrhiza fungi, so don't waste your money on it.

I prepare the soil in the fall. In the spring I go through it with a fork and tiller to make sure it is all mixed well and fine enough for planting.

PLANTING

Normal beetroots take three months from sowing to harvest. Giant beetroots need four months. Starting too early will cause the beetroots to go to seed. Bolting occurs if temperatures fluctuate too much. I actually force a few beetroots into bolting by starting them off early in a greenhouse. This allows me to get seeds in the first year instead of having to wait two years as usually is the case.

Beetroot seeds can be started four weeks before the last day of frost. You will want to protect the seedlings though. I start them around April 15th, outside in their permanent place. Tests with transplanting have always produced much smaller beets for me, either because the roots are disturbed too much or the temperature differs too much from inside to outside.

Beetroot seeds generally take 10-14 days to germinate. They will germinate between 50 and 85 degrees Fahrenheit. You cover them with ½ to ¾ inch soil. The plants need 3x3 feet. I always grow 4 plants in one 15ft long ridged bed. I start 6 seeds per position, which usually produces about 10 plants. As they grow you thin them out, leaving the strongest. If you have planted them too close together, cut off the ones you don't want, so you don't disturb the roots of the one you want to keep. Watch

out for seed rot and damping off if you start too early in the spring!

GROWING ON

Some growers mistreat the plants to get larger roots. Once you have only two seedlings left after thinning them out, you scratch away the soil around the seedlings, leaving only the tip of the root in the ground. Water them (not too much) and add slug pellets. It is best to do this in the evening when the sun has lost its power. The seedling will think it is about to die and pump more energy into the roots. You'll have to keep the seedling watered and out of bright sunlight for a few days until the plant recovers. Once both beetroots start to visibly swell, you can get rid of the weakest plant. I can't prove it works. I'm not sure how much it differs from transplanting.



FEEDING

Drenching is the main way of feeding beetroots. Foliar fertilizer can also be applied. Beetroots need more nitrogen and potassium than phosphorus. They also need calcium, magnesium and boron.

PROBLEMS

A too high PH-level and a Boron deficiency will cause heart rot. The beetroot will form a type of cancer and the leaves will wilt. The heart of the beetroot will turn to slush, so consider the beet history.

Slugs and woodlice like young plants. Get rid of them or at least prevent them from attacking the plant. This year I might try netting the young plants like you do to prevent carrot fly. That might help even out the day and night-time temperatures too.

Too much water or too little or large fluctuations usually cause beetroots to go to seed. So can starting too early or not thinning out on time. You can also blow up beetroots. Keep an eye on your plants and the soil.



Other than that, beetroots are relatively easy to grow. Depending where and how you grow, you might want to consider spraying with an insecticide once every fortnight from the period they are thinned out till harvest.

HARVESTING

No green is allowed, so I get rid of most of the foliage before harvesting as these plants can be huge. It just makes it easier digging it out. Just before weighing, you can cut off the rest of the foliage. Obviously you will need to wash the beetroot. No rotten parts are accepted.

There are British strains that look like beetroots on the outside, but once cut open they show pink and white striping. These have been bred with mangolds and should not be accepted for the table beet class.

If no restrictions are made to the type of beet, it is best to use mangolds as they will grow the largest.