Gardening on Clay

quick facts
identifying clay soil
improving clay soil
gardening with clay soil
plants for clay soil

Quick facts

Clay soils contain more than 30 percent fine clay particles

Clays swell and shrink as they wet and dry, effectively cultivating themselves

Clay soils take longer to warm up in spring

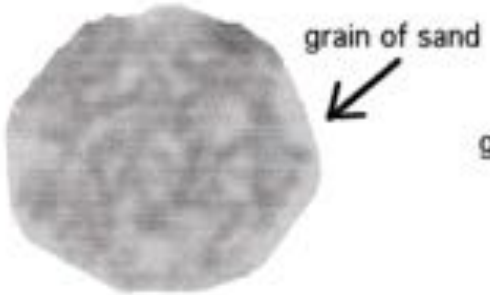
Wet clay soils are easily damaged when dug or walked on

Drought is much less damaging on clay soils than others soil types

Identifying clay soil

- Clays feel slightly sticky and dense
- They feel smooth (not gritty) when a piece is rubbed between finger and thumb
- A moist fragment can be rolled into a ball and then into sausage shape with no cracking
- If, after being rolled into a clay sausage the moist surface becomes shiny when rubbed, it is likely that the soil is especially rich in clay and is termed a ‘heavy clay’

Clay particles

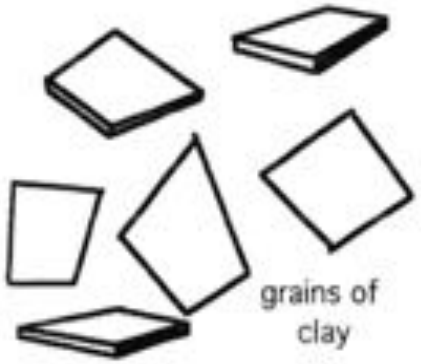


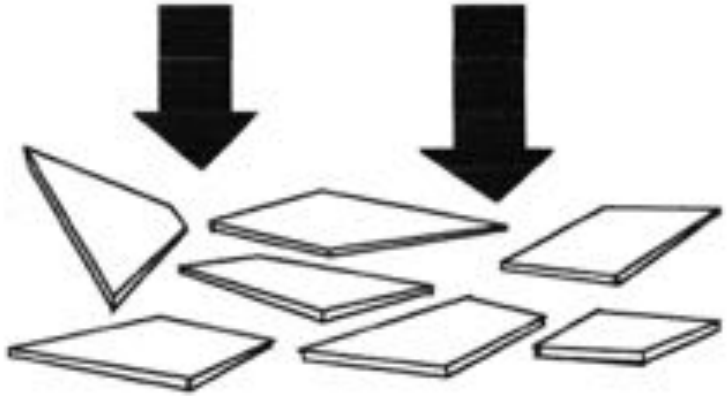
grain of clay

Clay has grains that are much much smaller than a grain of sand. Unlike sand, clay grains are basically diamond shaped and flat.

In the spring, right after you have tilled the soil in your garden, grains of clay will:

- be loose.
- be oriented in all different directions.
- have lots of space and air between them.





Even if you are careful and never walk on your soil after planting seeds, the action of water, provided by you or by nature, will gradually orient the clay grains horizontally.

This is why you see your soils 'go down' over the summer.

The clay grains eventually will form barier layers in your soil, layers that are anywhere from difficult to impossible for the roots of your plants to penetrate.

That's it people. You are out there watering those plants every day.....and packing the clay harder and tighter with each watering.

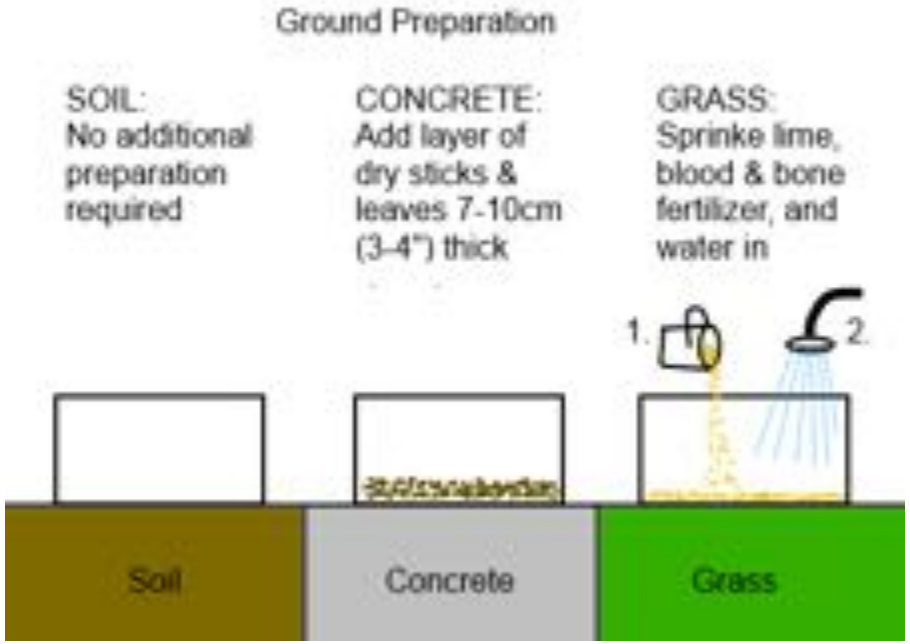
Digging clay soil

Improving clay soil

Make raised beds to assist drainage and to reduce trampling of the soil

Improving clay soil

Consider adopting a **‘no-dig’ regime**, especially in raised beds, as these suit clay soils well



Lasagne beds

Improving clay soil

Some, but not all, clay soils respond to **extra calcium,** which **causes the soil particles to flocculate (clump together).**

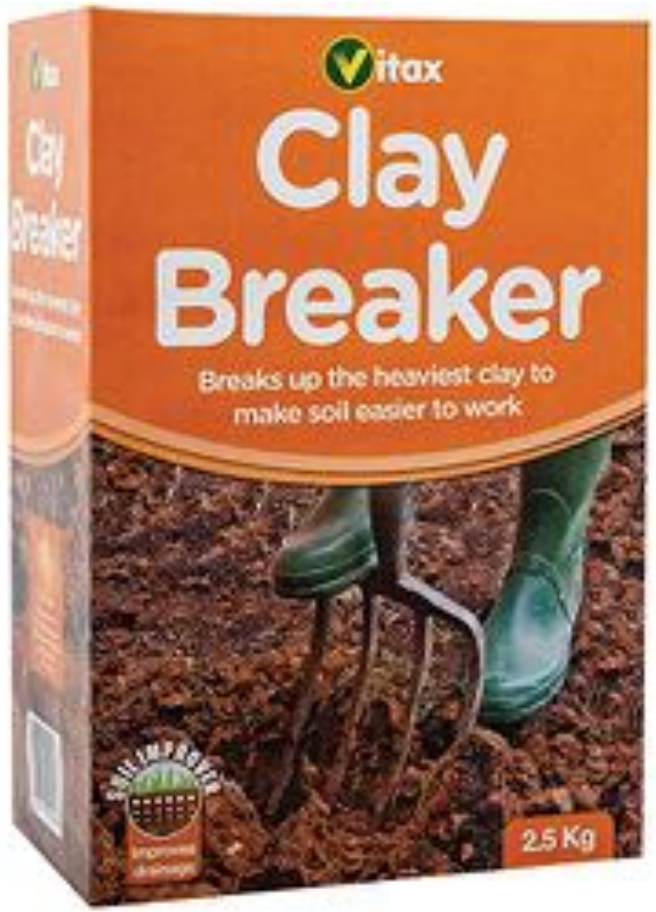
Where the soil is acid, lime can be applied, but elsewhere it is better to add gypsum. Gypsum is the active ingredient of many commercial **‘clay improvers’**.

Test on a small area in the first instance to ensure it is effective on your type of clay

Improving clay soil

- Wood ash is an excellent medium for breaking up a heavy clay soil, BUT only on acid soils
- On our alkaline soil, it is better NOT to use it as it just adds more alkalinity

Clay improver



- Clay breaker is a natural non-toxic mineral Gypsum, calcium sulphate
- It improves the physical condition of clay and allows easier intake of nutrients due to its calcium content.
- Not suitable for alkaline soils

Improving clay soil

- Dig in plenty of **bulky organic matter** such as manure or, ideally, composted bark, as this can make a noticeable improvement to the working properties of clay

Grow crops

- Grow potatoes, which will help to break up the clay soil

Grow crops

- Green manure available as seed to grow, then work into the soil

Retain moisture

- Add mulch in Summer to cut down on watering and improve soil

Retain moisture

Adding straw mulch to garlic

Gardening with clay soil

- When planting in clay soil, don’t just dig a hole and fill it with compost before adding your plant. This will create a sump which will rapidly fill with water and leave your plant sitting in a pond.
- You need to condition the whole surrounding area with compost, manure and gavel before any planting is done.
- Do not dig too deeply as you will disturb the layer of clay beneath the top-soil

Plants for clay soil

Iris

Agapanthus

Verbena Bonariensis with Salvia Nemerosa

Verbena Bonariensis

Hemerocallis

Hemerocalle citrine, Hemerocallis citrina

Kniphofia

Delightful intruders

Delightful intruders

Escholtzias

The garden here in Summer

Re-cap

- Quick facts
    - 30% clay particles in soil
    - Clays take longer to warm up in Spring
    - Clays can easily be damaged by walking on or being dug too deeply
    - Clays can tolerate drought better than other soils, but they do get baked and cracks appear

Re-cap

- Identifying clay soil
  - It is smooth and fine when moulded
  - Has a shiny appearance
  - Is heavy to work
  - Can be acid OR alkaline, here it is alkaline

Re-cap

- Improving clay soils
  - Make raised beds
  - Use no-dig method or make “lasagne beds”
  - Add lime/ wood ash or mushroom compost, but NOT on alkaline soils
  - Dig in organic matter
  - Grow crops such as potatoes or green manure

Re-cap

- Gardening with clay soil
  - Work in plenty of organic matter when planting and treat the whole area with manure or compost where the plant will spread its roots as it grows
  - Don’t dig too deeply as you will disturb the layer of clay below

Re-cap

- Plants for clay soil

  In MY garden the ones that do best are those that like to have their roots in clay which takes a long time to dry out

  Examples are ROSES, IRISES, HEMEROCALLIS
  KNIPHOFIAS, VERBENA BONARIENSIS

  - Plus a few annuals such as COSMOS and NICOTIANA