



leaves (like Lollo Rosso) require less water than soft lettuce (such as Little Gems).

(f) Planting perennial vegetables is a way of establishing drought resistant food crops. Some annuals can also be grown as perennials (e.g. Swiss chard, kale, globe artichokes, Babington leeks, cardoons, welsh onions). Plant once and eat always.

(g) Rotation systems group plants according to their watering and nutritional requirements (e.g. growing root veg - carrots, parsnips and beetroots - together and placing leafy crops like lettuce in with brassicas.) This can also save time as some groups are watered less frequently than others.

(h) Space vegetables which are 'water hungry' (like Brussels sprouts or courgettes) so their roots have a larger volume of soil to extract moisture.

(i) If planting Mediterranean plants, do so in spring when the soil is warming up. Some of these plants can be susceptible to root-rot if planted in autumn, and become cold and damp over winter.

(j) Most fruit plants are perennial so they can take advantage of water early in the season. They are easy to mulch as they are larger and



“Reducing plant transpiration losses in summer by shading and spraying anti-transpiration agents, e.g. salicylic acid, colourless plastics, silicon oil, wax or plastic, white reflecting materials such as Kaolin emulsions or white wash.”

Ragab, DRY hydrologist

separated from each other. The disadvantage is some species (like raspberries) like water during the fruit swelling stage.

(k) Growing a **smaller number of higher quality** plants is better than aiming for maximum yield, and only consuming a smaller proportion of the crop.

(l) Plants use water most efficiently where **nutrient levels are adequate** so apply sufficient fertiliser.

(m) Remove **weeds regularly** to prevent them depriving your plants of water.

Consider using vegetables in different ways. For example, traditionally in the UK the tops of beetroots are thrown away but in Greece, they are used as a form of spinach.

The young leaves of purple sprouting broccoli can be eaten (as well as the florets). Some vegetables have more intense flavours when watered less.

An example of an alternative drought resistant plant which can be grown without water (once established) is yacon.

See video on the DRY Utility: <https://dryutility.info/2019/02/08/ive-got-some-plants-here-that-i-have-not-watered-all-season/>

“I’ve got some plants here that I have not watered all season...”

Chris, Cornwall

Growing drought resistant crops on allotments



The DRY project has worked with allotment holders, the National Allotment Society and commercial growers to bring together the knowledge and advice in this guide



Before deciding which plants to grow, it can be beneficial to consider slope, aspect and soil type of your plot. If your site is on a slope, the top of your plot is usually drier than the bottom. So you might want to put perennial fruit bushes at the damper bottom and early season salad crops at the top where the soil will be warmer and drier.

Sandy soil drains quickly which means it will dry and warm up sooner in the summer. This will be good for plants that will be ready early in the season before the soil dries out. If your plot has heavy clay soil, it will be slow to drain and difficult to cultivate early in the season. Most soil types can be improved by adding organic material. Dig in large quantities of well-rotted garden compost, mushroom compost, and well-rotted farmyard manure.

“The seed can be washed before planting to encourage rapid germination but once planted, the drills need to be kept moist.”

Sarah, Somerset

Work with your site, look at what your neighbours are growing and which weeds come up. For example, if weeds include cow parsley and hogweed, members of the same family such as carrots and parsnips are likely to do well. Experiment with a range of different crops to find out what grows best for you. Read the information on the back of the seed packet.

The following background information on seed germination and dormancy may be helpful when considering plant selection:

Seeds of many common garden plants have been selected to begin growth immediately when supplied with water. Help them to germinate and successfully produce seedlings



“My grandad always told me to water drills.”

Victoria, Somerset

by watering the drill before planting, so that the seeds are placed in a moist environment

Seeds of many recently domesticated plants have one or more mechanisms that impose 'dormancy'. Dormancy is a survival mechanism that allows plants to avoid periods of unfavourable conditions. Plants whose wild ancestors grew in wet conditions like parsnips and parsley contain a growth inhibitor that has to be washed off before they will germinate.

Addition information for growers available from: <https://dryutility.info/resources-for-growers/Strategies> and plant selection for prolonged dry conditions:

(a) Avoid summer drought by growing winter annuals. In areas with mild winters, many plants can be planted in the autumn to grow slowly through the winter to produce an early crop (late spring/early summer) when vegetables in

“Focus on growing things that are expensive in the shops.”

Robert, Somerset

“I find brassicas for example, seem to grow ok and I find that runner beans seem to want really quite a lot of water.”

Allotment holder, Fowey

the shops are expensive. This could be done with broad beans, Swiss chard, kale, spring cabbage, chicory, etc. It also works well with many flowers such as calendula, cornflowers and Sweet Williams.

(b) Corn salad, land cress and oriental salad leaves (such as komatsuna, mibuna, mizuna, mustard and rocket) will provide leaves through the autumn, and winter if covered with a cloche, cold frame or fleece. Sow in early autumn while the soil is warm.

(c) Focus on high value crops. For example, grow on new potatoes (rather than main crop potatoes) which can be harvested early in the summer before the soil becomes dry (over the summer). Although a minimum amount of water is needed for tubers to fill, dry conditions help to prevent infections such as powdery scab of potato.

“What can you grow, do you change what you grow?”

Tom, Frome

(d) Many plants can grow with limited water once they have established, for example: kohlrabi, beetroot, parsnip. Observe the plants' growth and only apply water as necessary to encourage deep root growth and hardiness.

(e) Grow more drought tolerant plants. Some varieties are more drought resistant than others. For example, Cos lettuce requires less water than cabbage lettuce (such as Iceberg or Webbs Wonderful). 'Cut-and-come again' salad