

Do Plants Have Memories? *Thoughts on Acclimatization*

In essence, plants have memories! They are predisposed to grow according to what has come before. We all know the example of growing tulip bulbs in the Deep South. The flower stalks barely get above the leaves. But if the bulbs are pretreated with cold temperatures before they are planted, the necessary growth hormones are produced and stored so they come into play when the plants start growing in the spring.

I am not suggesting that irises need a cold treatment before planting, even though SDBs have been accused of not blooming well in zones with very warm winters, such as USDA Zones 9 and 10. But planting new rhizomes can be sad when they rot instead of growing new roots. Sometimes this is due to a lack of acclimatization. Beginners in the East sometimes buy expensive new introductions from growers in the West only to have them fail.

When I lived in St. Louis I tried to grow every MDB I could find. David Sindt in Chicago grew many *Iris pumila* selections that I lusted for, but when I purchased them they all rotted. They were fine healthy rhizomes when I received them in July, but the summer heat dried them out or, if I watered, rotted them. Surprisingly, if I ordered the same cultivars from Lynda Miller in Indiana they transplanted well. This was my first experience with acclimatization. It took going from Chicago to Indiana to St. Louis to get the tiny rhizomes adjusted to my conditions.

Too often I hear a hybridizer being accused of producing plants that won't grow in a particular area. I suspect this is because they were not properly acclimatized. Irises grow exceedingly well on the West Coast. The rhizomes are often big and fat. Experienced growers often lay them out in the shade to dry out before planting. Inexperienced growers sometimes complain about rhizomes that are not big and fat that came from other areas of the country. But these will undoubtedly do as well as their heftier counterparts. Usually allowing the fat ones to dry out a bit solves the problem. But the other possibility is to wait until someone in your club grows that coveted variety and then beg or buy a piece from them.

Of course, the irises that transplant with no problem are irises that are grown locally, often available at local club sales. These are usually dug very close to the sale date and have less transplant shock. They are also in sync with your climate. "Locally grown" is a mantra these days and it's basically true with irises as much as it is with food.

Even less transplant risk is found in potted irises. But pots are difficult to transport for the vender. Iris fields in bloom are also selling venues. Dug fresh from the field in bloom allows you to see what you are getting but often the irises will not bloom the following year because of being transplanted while in full growth, unfortunately. Better to get them after they have gone dormant.

Hopefully these considerations will help bring success to beginning growers.

The Elusive Loam

For years now it has been difficult to find "real" topsoil. Most trucking companies think that just because they scrape off the top of the site they are delivering "topsoil." The goal is to find a rich fertile loam. For years I wondered, "what the heck is loam?" Most gardening books take it for granted in their potting soil recipes. "Just add equal parts loam, humus and sand!" For some, humus is another mystery ingredient.

But loam has a precise definition. It is relatively equal parts sand, silt, and clay. If its content leans towards silt, then it is called a silt loam; toward clay a clay loam, etc. Each of these three components has a precise definition based on particle size: clay particles are less than 4 microns, silt particles have sizes between 1/25 and 1/16 mm (about 4 to 62 microns), and sand is more than 62 microns.

Silt is wonderful in that shortly after a rain it can still be dug. Although it remains damp it doesn't form the clods that clay does. Clay can be easily recognized because the particles are tiny plates that slide on each other. Walking on clay mud is very slippery. Wet clay can be noodled out into ribbons and still hold together while silt has more of the feel of flour. A little silt between the front teeth will feel gritty.

You can perform a simple soil test at home. Find a clear container. Fill it half full with your soil

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and then fill with water. Shake well. Then watch as the particles fall out. Rocks and sand will fall out immediately. Silt is a bit slower, but after a few minutes will form a layer above the sand. Clay can remain suspended for several hours, but finally settles in a top layer. Above that you have clear water and floating on top you have any humus that was in the soil. The proportions of each layer tell you if or what type of loam you have. If they are all equal than you have the magical LOAM.

Why is loam so wonderful? It drains well and contains lots of microscopic pores that hold air so that roots can get oxygen. It has enough clay to retain moisture on the surface of the particles. Along with water, other necessary minerals attach to the surfaces of the clay particles. So clay is rich in available nutrients. Heavy clay soils can suffocate roots when they become waterlogged, but a loam will drain the excess water. Loam does not form cracks when it dries out like a clay soil. Sandy soils, on the other hand, have trouble retaining moisture and nutrients.

What does one do if one has too much clay or sand? The hero is humus! Without humus, sands and clays are termed mineral soils. Humus is plant and animal material that has decayed into tiny particles, usually black or dark brown. In the South, the humus tends to decompose so quickly that soils are rarely more than a dark brown. But in the cooler North, the decomposition is slower and good humus-rich soils can be black. Humus-rich soils are called organic soils as opposed to mineral soils. Scientifically, organic simply means that the molecules contain carbon. Organic chemistry is the study of carbon-based molecules. Ironically, it has produced organic chemicals like pesticides and herbicides, but people have warped the word organic to mean that these organic chemicals are not present.

Irises can grow well in mineral soils so long as the roots have good drainage and aeration but an organic soil (lots of humus) is even better.



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