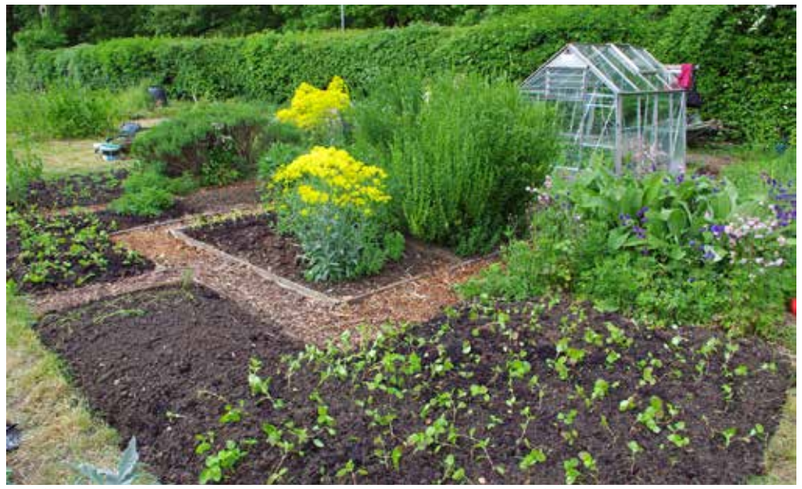
The Dye Plant Garden

Susan Dye, London Guild, and Ashley Walker

We were sorry to hear of the death of Susan Dye. As a tribute, we are reprinting this article she and Ashley wrote for The Journal WSD in 2017 (J261). A pdf of this article is also available on the AGWSD website.

Our dye garden is on an allotment plot in Hitchin, Hertfordshire, UK (hardiness zone 8, 52° N, 74m elevation, chalk soil). The site is in a sheltered setting with a sunny aspect. We specialise in three of the medieval *grand teint*[1] prized for strong, fast primary colours: madder, weld and woad. These give a wide palette with different mordants, acid and alkali modifiers and overdyeing. We also grow Japanese indigo for increased yield, dyer's broom (greenweed) which is of similar fastness to weld and two 'lesser' yellows: dyer's chamomile and dyer's coreopsis.



View of the garden in May — woad in flower and newly transplanted Japanese indigo *Photos: Susan Dye and Ashley Walker*

Propagation

We recommend that beginners grow dye plants in trays or modules. If given plenty of light, water and protection from pests they will yield tens, if not hundreds, of seedlings. Sowing directly into the soil is risky with the small number of seeds in a typical commercial packet. Slugs find the newly germinated seedlings very tasty! However, not all dye plants respond well to transplanting.

Weld is very sensitive to root damage and after planting out the leaves often turn brownish and die. Once you have plenty of your own saved seed it's fine to sow woad and weld directly in prepared beds; dense sowing will beat the slugs and snails.

Indoor propagation with extra light

Self-Seeding

If you can tolerate plants in inconvenient places, letting plants self-seed saves time and effort, especially for weld. To facilitate self-seeding, try to maintain some partially bare, not too dry and fairly undisturbed soil. As mulching suppresses self-seeding and encourages slugs, some hand weeding will be needed. Another reason to start by raising plants in trays is that it teaches familiarity with the dye plant seedlings at their earliest stages, when they look very much like weeds. Mulching can be used in mid-summer after cultivated seedlings are established and before the seed from mature plants is released. After several years, any digging will stimulate woad and weld germination. Weld is a pioneer plant and the seeds remain viable for a long time in the soil. Woad seed is shorter lived, though a vigorous self-seeder from one year to the next.

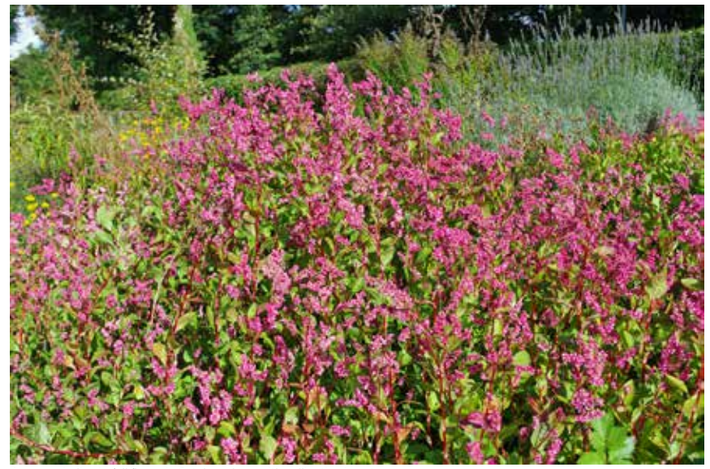
Garden Layout

The garden is made up of six small interlocking beds accessed by mulched paths. To bring out the beauty of plants like madder, weld and woad we plant single species en masse. This not only looks good, but crowds out the weeds and keeps the soil shaded and moist. To complement the predominantly yellow flowers of the dye plants, we grow insect-friendly blue flowering plants with a range of heights and habits: forget-me-not, scabious, viper's bugloss, borage and lavender. Self-seeding aquilegia (pinks and purples) and feverfew (white) are easily moved around to fill gaps if required. Finally, so the weld isn't the only tall plant, we also grow patches of goldenrod and elecampane. Japanese indigo's attractive pink flowers provide a valuable late nectar crop for honeybees when planted *en masse*.

Yellow against blue — dyer's greenweed and lavender

Biennial Plants

Weld and woad's natural life cycle is to germinate in summer and autumn, develop a rosette of leaves for over-wintering, produce a flower-spike the following year and die after producing seed. Woad blooms in May and weld in June/July. Woad only gives indigo in the rosette stage. Weld can be used for dyeing as a rosette, but it makes sense to wait for it to reach full size as the whole plant contains dye. Both plants are a challenge for the aesthetically minded gardener because of the dramatic change in habit from first to second year. Traditionally gardeners would grow biennials in out of the way beds or pots in the first year and carefully transplant into show beds in the autumn or following spring. One strategy to keep dye plant beds looking pretty in the first year is to interplant with a few bedding annuals. Where biennials self-seed it is possible to get first and second year plants growing attractively together.



Japanese indigo in full flower in October, abuzz with pollinating insects

Weld rosette

Woad rosette

Soil Type, Fertility and Crop Rotation

Our light, rather poor alkaline soil is not ideal for woad or Japanese indigo, which will not thrive unless the soil is very fertile. We avoid synthetic fertilisers, preferring to use animal manure and home-made compost. Indigo depletes the soil of nutrients very quickly and a second application of manure is needed after the first leaf cut of the season. By contrast, our soil suits the madder and weld very well but if your soil is acid, use an application of lime before planting.

In our experience, Japanese indigo does not thrive on the same ground two years running, even with generous feeding. Weld and dyer's chamomile do not require high nutrient levels so we rotate these with Japanese indigo and woad. Research has shown that weld produces less yellow pigment if the soil has high nitrogen levels (Hartl and Vogl, 2003).

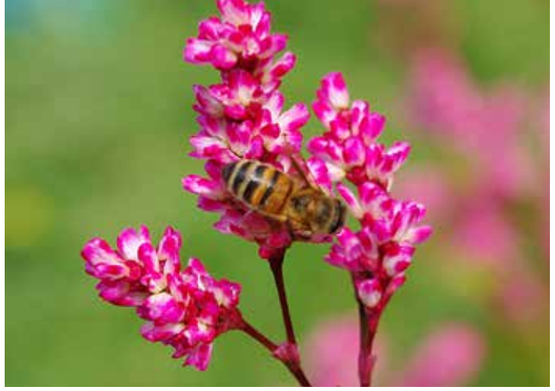
How much of each dye plant to grow?

This depends on the amount of material you wish to dye, the pigment yield from each plant, your ability to store dried plant material and, very importantly, the amount of time you have for harvesting and processing. It's surprisingly easy to over-plant. Japanese indigo and woad must be processed as soon as they are harvested. We struggle to take an early crop from the woad because it coincides with the honeybee swarming season. Japanese indigo is ready in August and September when many people are on holiday, busy looking after children or, in our case, extracting honey.

Harvest

We aim for a mix of dye plants with different harvest times to spread the task over the growing season. Weld and dyer's greenweed can be harvested in early summer. Weld can be easily dried and stored but takes up a lot of space, even when cut into small pieces. We store weld in thick paper cereal sacks or storage jars. We are relatively new to dyer's greenweed and so far have

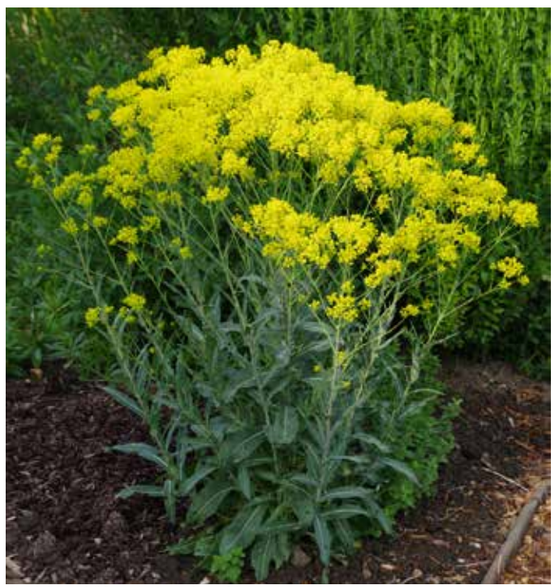
Mass planting of weld with first-year plants in foreground



Japanese indigo with honeybee

Japanese indigo stalks after stripping

Weld flowers



Woad plant in full flower in May, in front of dyer's greenweed

only used it fresh. Woad can be cut in June/July if planted early and will re-grow. Japanese indigo is best just before flowering in August/ September. Dig madder root in October or later. Nearly all the plants can be harvested more than once and flowers of chamomile and coreopsis can be picked continuously from mid-summer to late autumn. Chamomile and coreopsis (right) will need to be harvested several times before you can obtain enough flowers to dye a worthwhile amount of fibre.[2] Except for the indigo-bearing plants, all our dye plants can be dried for storage so a vital piece of equipment is the herb drier.

Getting the best from your dye plants

Japanese indigo (*Persicaria tinctoria*) – Blue – *Grand Teint* Quality[3]

A tender annual waterside plant from China/Vietnam. Closely related to UK native common bistort.

Propagation: Seed is only viable for a year. Plant in heated seed trays from early April. Plant out in sunny position May/ June. Grows from cuttings readily.

Critical factors: Needs a run of hot summer days to get going. Grows better in a greenhouse or polytunnel. Demands heavy applications of fertilizer and annual crop rotation. Water regularly (every day on hot summer days). Long growing season and mild autumn essential for plants to flower and set seed. Dies with first frost.

Tips: After stripping the leaves from the first cut, put the stems in buckets of water with a little liquid fertiliser. They will soon sprout new leaves for an extra harvest. To encourage the plant to flower and set seed earlier, grow some plants separately and treat them harshly (water sparingly and restrict fertiliser). To make seeds last longer dry them out with silica gel and freeze them. Harvest the plants before they flower as indigo yield drops thereafter.

Common Madder (*Rubia tinctorum*) – Red – *Grand Teint*
Hardy perennial clambering plant from Asia. Closely related to native wild madder and the common weed cleavers/goosegrass.

Propagation: Difficult to grow from dried seed but easy to take root cuttings from the underground stems in spring.

Critical factors: Needs to grow for three or more years before roots reach a harvestable size. Very invasive. Aerial parts die back at the end of autumn. Hard to keep madder beds free of weeds.

Tips: Grow in deep containers (60cm minimum) or beds with barriers to control underground shoots. Fertilise and mulch over winter for weed suppression. Most of the best roots are usually near the surface. Grow in light sandy or compost rich soil.

Weld (*Reseda luteola*) – Acid Yellow – *Grand Teint*
Summer flowering, tall biennial wild flower native to UK. Closely related to wild mignonette.

Propagation: Grow from seed in modules or allow to self-seed.

Critical factors: Very sensitive to root damage. Need to grow a lot of plants to get enough colour for a serious project.

Tips: Allow plant to self-seed. Grow en masse for visual impact. Do not over-fertilise. Best grown in soil previously used to grow woad or Japanese indigo.

Woad (*Isatis tinctoria*) – Blue – *Grand Teint*
Native spring flowering biennial in the cabbage family.

Propagation: Easily grown from seed. Prolific self-seeder.

Critical factors: Indigo dye only obtained from rosette leaves. Needs heavy fertilising for best results. Some people dislike the smell of the leaves.

Tips: If flowering second year stems are cut before they seed, the plant can often be induced to return to its rosette stage when the leaf can be harvested again for indigo.

Dyer's Greenweed (*Genista tinctoria*) – Acid Yellow – *Grand Teint* Quality
Summer flowering perennial shrub. Broom family.

Propagation: Grow indoors from seed in spring in trays. Self-seeds easily. Ignore seed packet advice to sow in autumn.

Critical factors: Susceptible to aphid attack in late summer, though natural variability seems to leave some plants unaffected. Prefers damp acid soil but will grow in alkaline soils if cared for.

Tips: Best cut in spring but can be used throughout the growing season. Vigorous once established, when pruning will yield much dye material. Showy cultivars available commercially.

Dyer's Chamomile (*Cota tinctoria*) – Warm Yellow – *Petit Teint*
Weak perennial, i.e. it invariably dies in mid-summer of the second year.

Propagation: Grows very well from saved seed and transplants easily. Self-seeds to some extent.

Critical factors: Slugs and snails threaten the survival of young seedlings. Protect in spring/early summer with organically approved slug pellets applied sparingly.

Tips: Growing first and second year plants extends the harvest season from June to October. Seedlings can be kept in a tray all year without flowering and transplanted the following spring.

Dyer's Coreopsis (*Coreopsis tinctoria*) – Orange/Gold/Brown – *Petit Teint* Quality
A very pretty prairie annual from North America.

Propagation: Grow from saved seed. Rarely self-seeds in UK.

Critical factors: Susceptible to slug and snail attack. The blighters have a habit of chewing through the main stem near the ground, often killing the plant. Use organically approved slug pellets sparingly.

Tips: Plant seedlings en masse (four inches apart) for a good display. Water regularly in hot weather and pick frequently to prolong flowering life.

Conclusion

We find it deeply satisfying to grow our own colour. It brings us into a very close relationship with the small patch of land we rent and the plants, insects and other animals that we share it with. Yes, we could buy quite a lot of plant dye pigment for the price of maintaining the allotment and it does take a substantial investment of time. However, using home-grown colour in a piece of textile art or functional clothing is without price.

Footnotes

1 Strict ordinances and regulations governed dyeing in medieval Europe. In France there were two classes of dyer's guild. The premium dyers used the grand teint, i.e. the most permanent dyes: madder, cochineal, weld and woad. The remainder used petit teint, i.e. less colourfast dyes. See: Hofenk de Graaff, J. (2004) *The Colourful Past*, London: Archetype Publications.

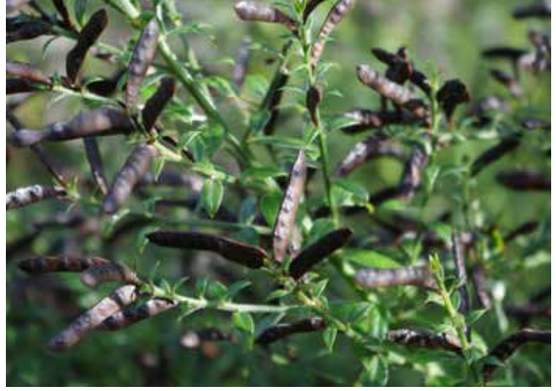
2 With dyer's chamomile and dyer's coreopsis the whole plant can be used in the dyepot, but the colours obtained are not as clear as using flowerheads alone.

3 In this article, we have added the word 'Quality' to plants which were not available to medieval dyers, but which we judge to give equivalent *grand teint* or *petit teint* results.

Further reading

Hartl, A. and Vogl, C. (2003) The Potential Use of Organically Grown Dye Plants in the Organic Textile Industry. *Journal of Sustainable Agriculture,* Vol 23(2) pp.17-40. *http://dx.doi.org/10.1300/J064v23n02_04*

Notes on Health and Safety – See p. 23.

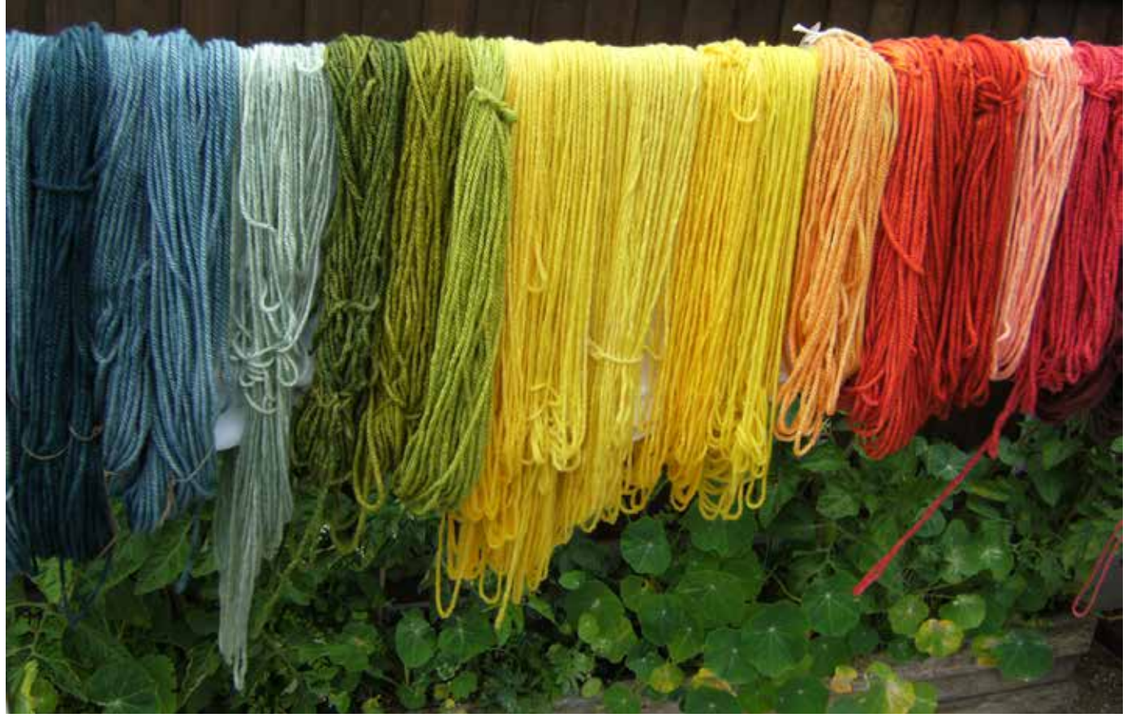


Dyer's greenweed seed pods in October

Dyer's chamomile flowers

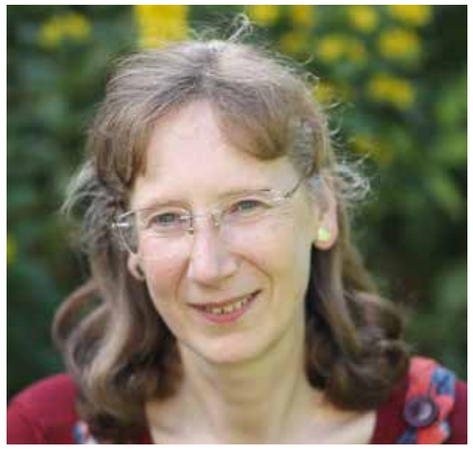
Dyer's coreopsis flowers

Red dyer's coreopsis



Plant dyed Bluefaced Leicester wool yarn

Susan Dye 1963 - 2024



With her husband Ashley, Susan founded Nature's Rainbow and wrote a blog on dye plants and dyeing, sold dye plant seeds, ran natural dye workshops and mentored students setting up dye gardens. She became heavily involved with North Herts Guild and later the London Guild. In the last few years she put most of her energy into local community based projects collaborating with fashion student Cora Wall to create a dress dyed with food waste, and a local Horticultural therapy project 'Growing Ability'. She also collaborated with other leading natural dyers Debbie Bamford, Jane Deane, Isabella Whitworth and others to do an in-depth investigation into Foraging for Colour.

Susan loved the natural dye community and made many good friends and would have liked to get to know more of the wonderful people whom she met through workshops and events.

Her final workshop was with a group of Ukrainian Refugees. She was already quite ill by then but refused to cancel. Susan died of stomach cancer on 4 November 2024 after a three month illness.

Ashley Walker, December 2024

Journeys in Tapestry

Fiona Hutchison

Fiona Hutchison is a tapestry weaver and tutor living in Edinburgh. In this article she describes how she became interested in tapestry weaving and how she has developed her craft.

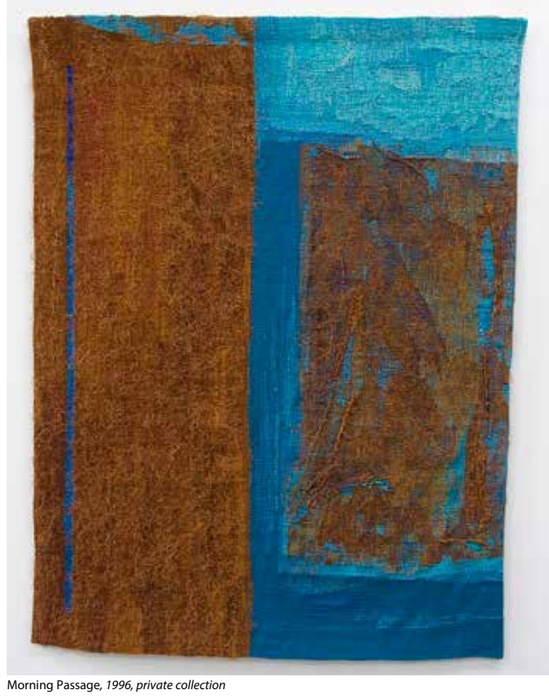
How does one become a tapestry weaver? For me, it was something I fell into by chance. I was a maker, taught by my mother and many great aunts to sew and play with fabrics. Developing a passion for dressmaking and fashion, I wanted to be the next Zandra Rhodes or Bill Gibb. With my sights set on a creative career, studying at art school was my goal. However, it took a few years to achieve this as, like many artists and creative people, I was dyslexic and struggled with the written word. Academic qualifications were essential, as courses at Art School were now at BA honours degree level. Determination and persistence paid off and I was accepted into Edinburgh College of Art on a four-year BA hons degree programme. My first year of study was the equivalent of a foundation course, where you could try many different disciplines before specialising. This is where I found and fell in love with tapestry. It was truly a chance meeting, as Edinburgh College of Art was the only Art College to have a department that specialised in tapestry. That was nearly forty years ago and, as they say, the rest is history.

For me there is something very engaging and compelling about tapestry; you could almost call it addictive. It is a medium that offers great potential and can take many forms: from miniature to monumental, flat woven to textural or sculptural. It can be figurative or abstract, painterly or graphic, it can tell stories, carry political messages and create complex environments.

I was inspired by the monumental woven structures of Polish artist Magdalena Abakanowicz. Her hanging environments, sculptures in space and textiles made a big impact on me. I was fascinated by the way a tapestry is built, constructed thread by thread, building an object with a very strong presence. The first tapestry I wove at college was *Compost Heap* (1982), a very modest attempt at three-dimensional textural and sculptural tapestry. At that time, teaching in the tapestry department of Edinburgh College of Art was unique in the tapestry world. The emphasis was firstly on creativity. Ideas were paramount and led to encouraging us to explore the best process and technique to execute our ideas. We were first an artist and then a weaver. The teaching of techniques was kept to a minimum, we were encouraged to play, discovering our own personal approach to the medium. We were motivated to experiment with different fibres, structures and techniques, such as paper and felt making, or incorporate other materials into our work that added another dimension to the finished piece. Drawing always played a very important role in the Tapestry Department, with a full day of life drawing and experimental drawing projects through the term, and even during our holiday breaks. We were continually pushed to look, record and explore our ideas on paper, through sketch books and other mediums like photography.

Over the years I have explored many forms of tapestry, each cycle of design and weaving lasting about ten years, before slowly shifting to embrace a different quality of tapestry. Early college experiments in three-dimensional tapestry gave way to exploration of the woven painterly technique. Many people thought my tapestries were painting, so by the late 1990s I began to add more texture to my weaving (*Morning Passage, 1996, private collection*). In the early 2000s, after several trips to Japan and a residency in Cromarty on the northeast coast of Scotland, my style made another shift. The colour became lighter and more

Compost Heap, *1982* *Photos: Fiona Hutchison*



Morning Passage, *1996, private collection*