

KNOW YOUR ONIONS

If my article on the carrot family in the last issue of Bushcraft and Survival Skills Magazine seemed a bit daunting, then you'll find the onion, or allium, family much easier to get to grips with.

Chances are, you are already familiar with wild garlic or ramsons (*Allium ursinum*), which have been at the vanguard of the upsurge in interest in wild foods in recent years. This is no surprise, as they tick the three boxes every novice forager looks for: easy to find, easy to identify, and delicious. But they are by no means the only rewarding member of this family.

The wild relatives of cultivated staples like onions, garlic and leeks offer great gastronomic and nutritional rewards. Early spring is absolutely the best time to take your knowledge of them to new levels and to harvest and preserve them for the year to come.

MEDICINAL, BUSHCRAFT AND NUTRITIONAL USES OF ALLIUMS

Forget apples...it's a garlic bulb a day that keeps the doctor away!

Garlic has famously been employed to deter vampires. As with many legends, this has a basis in more practical traditional uses as a blood purifier and the pungency of its active compounds to deter more troublesome blood-suckers. The juice of most alliums can be useful in deterring biting insects. To be honest though, I favour a midge net, as smearing yourself in wild garlic juice may see off more than just a few insects!

The flavour of alliums that we now hold in high esteem is actually a defence evolved to deter grazing. Unmolested pre-flowering alliums tend to be more or less odourless. The second they are cut, bitten or otherwise damaged, the enzyme

AUTHOR PROFILE:

MARK WILLIAMS

Mark Williams shares his lifelong love of wild foods through his free online learning resource, GallowayWildFoods.com and as a full-time foraging tutor. With clients ranging from Michelin chefs to bushcraft schools and primary school pupils, Mark passionately believes that wild foods should be accessible to all. He runs courses UK-wide, but is happiest at home harvesting for friends and family in the forager's paradise of Galloway, south-west Scotland. He has worked as a chef and fisherman and served in Mountain Rescue Teams since he was 15. You can Tweet with Mark on @markwildfood



alliinase converts alliin into allicin, which is responsible for the pungent garlic and onion flavours so appealing to most humans, but reprehensible to grazing animals. It is also actively toxic to many animals, reducing the blood's capability to carry oxygen. Don't let your dog eat wild garlic.

This clever defensive strategy is a real own-goal when the onion family meets humans. As well as being delicious, allicin and other compounds found in alliums such as kaempferol and quercetin, have proven anti-bacterial, anti-fungal and anti-viral properties. They can be useful in the treatment of everything from bites, wounds and headaches, to heart disease, cancer, viruses and lots more.

In a bush-medicine context, you'd do well to consume plenty of raw allium greens and bulbs for their gentle, natural antibiotic and antiviral properties, as well as their all-round nutritional profile. Laying the bruised leaves or rubbing the juice of say, wild garlic, on cuts and sores can only help, perhaps in conjunction with ribwort plantain (*plantago lanceolata*).

Alliums: Nutritional Values	KiloCalories/100g	Grams/100g	
	Energy	Protein	Fat
Crow Garlic bulbs	137	6.2	0.2
Wild Leek/Ramson bulbs and stems	52	2.2	0.3
Dandelion (for comparison)	45	2.7	0.7
Cultivated leeks	60	1.4	0.3

Compiled by Galloway Wild Foods from multiple sources, notably Robert Shosteck "The Nutritional Value of Wild Foods" and Self Nutrition Data, both available online

EATING AND COOKING ALLIUMS

The allicin and other compounds that give alliums their pungent flavour are highly volatile. In a practical sense this means that heating them alters and vastly reduces their characteristic flavours. Just think of the sharp, cheek-puckering, eye-watering properties of a raw onion, compared to its sweet unctuousness when cooked. This general transformation occurs to a greater or lesser degree in all alliums and you should consider this when you prepare and eat them.

I used to be a bit of an "allium purest" - scoffing at those that cooked ramsons or wild leeks until no hint of their raw pungency (and precious little of their goodness) remained. But, like an onion in a wok, I've mellowed. I now see the place for using the mild, sweet, grassy flavours that are left after cooking as background in sauces, soups and stews. But remember you won't get a garlicky hit or oniony "fizz" if you cook most wild alliums for more than a nanosecond.

In general, when adding wild alliums to hot dishes, chuck them in at the last possible moment to retain their vibrant characteristics. Better still, to experience all that's good about alliums add different elements at different stages of the cooking process - being sure to blitz through some raw pizazz at the end!

WILD GARLIC
aka Ramsons (*Allium ursinum*)

Wild garlic grows in delightful abundance in well established, moist, deciduous woods and hedgerows throughout the UK and much of Europe. It has a preference for slightly acidic soils and is considered an Ancient Woodland Indicator species.

Most wood-lovers feel a glow of affection when they think of its rich, carpeting growth, vibrant flavour and stunning star-bursts of white flowers. It encapsulates the freshness and generosity of spring, though it actually starts its life cycle in the depths of winter. It starts to appear in my area of SW Scotland in mid-January -

Milligrams per 100g								
Calcium	Phosphorous	Iron	Sodium	Potassium	Thiamine	Riboflavin	Niacin	Vitamin C
29	202	1.5	19	529	0.25	0.08	0.5	15
52	50	1.1	5	347	0.11	0.06	0.5	17
187	66	3.1	76	397	0.19	0.26	-	35
58	34	2	19	176	0.11	Trace	0.4	12



surprisingly a few weeks before I hear any reports from foraging friends further south. I don't know if it's the nutritional goodness, vibrant flavour, or symbolism of new life that gives me a joyful burst of energy in the winter gloom. Probably all three!

Identification is quite straightforward once the 20-35cm long, 4-6cm broad lanceolate, hairless leaves are formed. It gets even easier once the flowers emerge around April in glorious starbursts of small white petalled flowers

Wild Garlic Flower Buds,
March



arranged in globes. Any doubt over identification should be eliminated by the distinct smell of garlic from all parts when crushed.

Having said that, as foraging for wild garlic becomes ever more popular, I expect mistakes will occur. I've seen people indiscriminately cutting sheaves of leaves, paying very little heed to what may be mixed in. You can avoid this issue by picking mindfully, showing due reverence and care for both the plant, and what goes in your mouth! Though not particularly similar to the discerning eye, you should be aware of the following when picking ramsons:

Lords and Ladies, aka cuckoo pint, (*Arum maculatum*) - This will burn your mouth in a deeply-unpleasant-but-unlikely-to-be-fatal kind of way. Distinguish its leaves by the strong V shape where they meet the stem; glossy, often variegated-look; and small trough that runs around the leaf edge.

Lilly of the valley (*Convallaria majalis*) - Highly toxic and potentially deadly. While the leaf shape is broadly similar to wild garlic, it is more fleshy, lacks the scent of garlic and only ever grows with pairs of leaves (wild garlic always grows in larger bunches). The flowers are quite different: bell-shaped and growing in racemes.

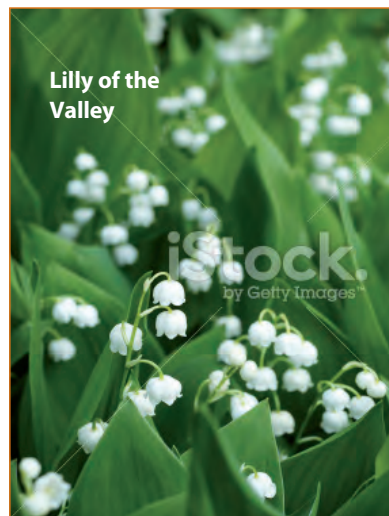
Foxglove (*Digitalis purpurea*) - Deadly poisonous. Be careful no leaves of this common woodland

plant, that often shares habitat with wild garlic, get mixed in. One is enough to kill you, and the very distinct flower heads don't appear until after the wild garlic season. The leaves, fortunately, are really quite different - hairy, deeply veined, lobed at the edges.

Basal Leaves of foxglove: hairy, veined and with a wavy edge



Lords and Ladies (*Arum maculatum*), March. Note the pronounced veins and deep V where the stem joins".



RAMSONS V RAMPS

There seems to be some confusion in foraging literature over the difference between ramsons and ramps. For clarity, ramps (*Allium tricoccum* - also known as wood leek or, confusingly, wild garlic) is found wild only in Eastern North America. I have never foraged or eaten ramps, but from what I read, they are very similar to their European relatives in look, habitat, flavour and usage, though there does seem to be more of a tendency to uproot them in the US.

Ramsons (*Allium ursinum*) are native to Europe and most commonly referred to in the UK as wild garlic, though it also goes by various colloquial monikers including buckrams, broad-leaved garlic, wood garlic, devil's garlic, gypsy's onions and stinking Jenny.

"Ramson" is derived from the Anglo Saxon word "hramsa", meaning rank. The butter and milk of cows that have grazed ramsons can be tainted, though this flavouring was popular in 19th century Switzerland. I wonder how long it will be until we see "ramson-fed cow's butter" on fancy menus...

In much of Europe *Allium ursinum* is known as bear's garlic, which is reflected in the ursine nature of its binomial name. Brown bears know what's good for them and gorge on the shoots and roots when they emerge from hibernation. I suggest you do the same!

Although wild garlic is generally abundant, I'm starting to hear reports of over-harvesting in the UK. This generally occurs where lazy, greedy, unmindful foragers strip large areas for re-selling, or use in commercial kitchens. Large ecosystems can depend on abundance and clearing expanses can have repercussions throughout the environment. As with all wild plants, picking should be done mindfully, considering other foragers and plant lovers, but more importantly, the reliance of a wider arc of nature on finite resources. In practical terms, this means spreading your picking around and resisting rapidly stuffing sheaves of leaves into carrier bags. I would discourage anyone from uprooting ramsons: the bulb is poor and usually splits into a soggy outer and a tiny succulent inner - a poor reward for undermining future crops.

Like all "glut" crops, wild garlic demands close attention and thoughtful preserving while in season to lay down stores for autumn and winter. Most people focus on the green leaves and paler leaf base, but they have many more delicious edible parts:

Leaves and leaf stems - excellent raw in salads, used as you would spring onions, but also cooked as a lighter,

sweeter, grassy background flavour (see my general notes on cooking alliums above). Some people like to separate the pale stems from the open green leaves, citing a slight difference in flavour which I can't detect. The broad leaves are excellent as a wrapper for on-the-spot sushi rolls. If you've never blitzed them with oil, nuts and possibly a little cheese to make a punchy pesto, then you're missing out. I also use them to wrap fish for steaming or to make dolmades. They can be frozen in ziplock bags for cooking later. My very favourite way to preserve and eat them though, is lacto-fermented - a great way of preserving in a bushcraft setting, adding new dimensions of health and flavour - see my attached recipe.

Flower buds - these form very early but remain hidden in the leaf stems until thrust skyward in March/April. They make beautiful garnishes and stunning pickles.

Flowers - Whether just emerging from the buds or fully opened into their globe formations, flowers are always delicious and best eaten fresh in salads or strewn on soups and tarts.



Seeds - It is possible to harvest large numbers of the freshly formed, succulent, crunchy "seeds" (they are technically pods) quite quickly. Try pickling them like capers or scattering as "flavour bombs" through soups

and salads. As they darken they lose their flavour and go hard.

WILD LEEKS

There is absolutely no need for anyone who lives anywhere near a park, woodland or shady riverbank to spend a single penny on spring onions between January and July. If you can't find wild garlic, chances are you'll get some wild leeks. They grow very happily (some would say invasively) in semi-urban settings and especially parks.

If you come across a plant that reminds you of wild garlic, but has narrower leaves and less of a garlic smell, you may have found wild leeks. These aren't the hulking great Frankenstein leeks you might expect to find in shops and gardens, but something tender and elegant, much more closely resembling spring onions. They start to grow between November and February.

Be aware that crocuses, snowdrops and bluebells grow around the same time and can be mixed through wild leek colonies. They are all toxic, but unlikely to do you much harm.

The three varieties of wild leek you are most likely to encounter are:

Few-Flowered Leek (*Allium paradoxum*) - These are rather daintier than any of their cousins but can carpet large expanses of woods and parkland with 20-40cm long, 5-25mm wide leaves. As its name suggests, it has rather fewer flowers than one might expect from such a vigorous plant, but it makes up for this by producing lots of bulbils which are good to eat



Three cornered leek in full flower, London, March.

Image © John Renston, Forage London



Few-flowered leek, Ayrshire, March

in similar way to wild garlic seeds. They have a mostly northern distribution and are common in Scotland. Use in the same ways as you might wild garlic. Few-flowered leek is considered so invasive that it is illegal to spread it in the wild, though I would happily have it in my garden instead of grass.

Three-Cornered Leek (*Allium triquetrum*) - You are more likely to encounter these in the South of England, where they are not uncommon in parks, verges and hedgerows. Rather larger than its relatives, its long, thin leaves grow up to 60cm. They are distinctly triangular in cross-section and though milder than most other alliums have a very pleasing succulence. It has the tastiest and prettiest of all allium flowers which are bell shaped and white with a green strip, growing in drooping umbels.

Babington's Leek (*Allium ampeloprasum* var. *babingtonii*) - This is the closest you will get to a cultivated leek in the wild. It grows up to 2m tall, though its relatively slender girth always makes it seem more like a baby leek. The greyish-green leaves are flat and hollow with a ridge running down their back. Their flowers heads look like pink pom-poms of bulbils with a few wispy white flowers waved erratically above.

OTHER WILD ALLIUMS

The much less common *Allium ampeloprasum* is distinguished from Babington's leek by its huge flower ball and is too rare to pick. On the coast you may encounter sand leeks otherwise

known as rocambole (*Allium scorodoprasum*) which are quite similar to Babington's leek and have similar uses.

Field garlic (*Allium oleraceum*), rosy garlic (*Allium roseum*) and crow garlic (*Allium vineale*) all have a dense bulb more reminiscent of cultivated garlic, with narrow leaves that can be used like chives when young and tender. They can be found on sandy soil in verges, field edges and especially around the coast. None are rare, but their narrow leaves make them quite grass-like and hard to spot. I recommend looking out for their pink and purple pom-pom-like flower heads in early summer. Where established you should be able to return for a steady harvest year after year, and nobody is likely to object to you carefully uprooting a few bulbs from large, invasive patches.

RECIPE: HOW TO LACTO-FERMENT WILD GREENS

Fermentation offers great scope for bushcrafters who wish to preserve and store glutts of wild greens without needing a fridge or freezer. All you need is the plants, some jars and a tiny bit of salt. The process retains most of the beneficial raw qualities of wild greens and enhances them by introducing health-promoting bacteria.

I understand why many people feel a little trepidation at the prospect of actively encouraging bacteria in our food, but this is largely a result of aggressive, misguided marketing and a culture of misunderstanding. We aren't talking about letting your food go



“off” or mouldy here. We are allowing beneficial bacteria to preserve and enhance our diet. Fermenting wild plants is magical and very rewarding, and works particularly well with wild garlic and leeks.

1. What to ferment? I recommend you start with something you can gather quickly and easily in decent quantities - another reason to start with alliums. Sea beet, cow parsley, common hogweed, watercress, garlic mustard and sea kale also work well.

2. Round up enough of the plant you wish to ferment. How much is enough depends on how much you'd like to make, the plant you are using and the vessel you wish to ferment it in. Going on wild garlic, if you want to fill a 1 litre Kilner jar you will need a surprisingly large amount - a well filled carrier bag. A quarter of that would do for a standard jam jar. The plants you use should be squeaky-fresh - I don't recommend this process to “rescue” stuff that's been lurking in your fridge for a week.

3. Wash the plants and remove excess moisture. A quick whizz in a salad spinner will do - you don't want the plant dripping in tap water - it contains chlorine and additives that inhibit fermentation.



Few-flowered leek washed and shredded for fermentation

4. Shred the plants. You could use whole leaves but shredding makes it easier to spoon the finished product out of the jar later.

5. Place the shredded plants in a large open bowl, a few handfuls at a time. If you are only fermenting a small amount, it can all go in the bowl at the same time.

6. Sprinkle each layer lightly with natural sea salt. It is important to remember that the salt is not a preserving agent in this process, merely a means of drawing out the leaves' natural juices. You will be tempted to add too much salt first time around. This is OK, you'll just have quite a salty ferment and not add so much the next time. For a carrier bag of wild garlic to fill a 1 litre Kilner jar, I add about 1.5 teaspoons of salt – sprinkling a little on each layer then adding more leaves and sprinkling again. It is possible to ferment without adding any salt at all – but I suggest leaving that until you are more confident with the process. The weight of salt added should be

about 2% of the weight of the greens.

7. Leave to stand for 20 to 60 minutes. This allows the salt to start its work drawing the juices from the leaves.

8. Massage the salted, shredded leaves. Give them a good rub/massage with your hands until they darken, become wet and start to lose their form.

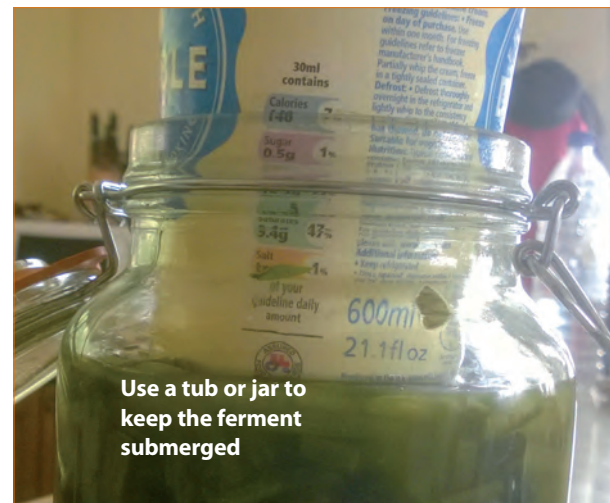
9. Leave to stand for another 20 to 60 minutes. Weighing the leaves down with a plate can help get the juices flowing here – but it's not essential.

10. Pack the leaves firmly into a glass or earthenware vessel. Ensure the vessel is clean. Jam jars work fine, or kilners if you are doing a larger amount. Traditional fermenting crocks are made for the job – lucky you if you have one as it makes the next stage a lot easier! As you add the leaves to the vessel, champ them firmly down with the end of a spoon or rolling pin or the like – it is important to avoid air pockets between the wet leaves.

By the time you have three quarters filled the vessel with champed down plant, you should be aware of plenty of juice. If you are packing into multiple vessels, ensure you add the liquid left in the bowl evenly to top up each vessel to about three quarters full.

11. Test for liquid. When your vessel is about three quarters full, press firmly down on the leaves. There should be enough liquid to cover the leaves. If there isn't, ensure you have evenly distributed liquid if you are using multiple vessels. If you can't get the juice to cover the leaves, add some uncarbonated mineral water – DO NOT be tempted to add tap water, as the additives inhibit fermentation.

12. Weigh the leaves down in the vessel. Fermentation must take place in an anaerobic environment – ie. with no air present. So now you need to find a way to keep the leaves weighed down beneath the level of the liquid in the vessel. Traditional fermenting crocks have specially designed lids for this very purpose. I don't have one, but fortuitously, a standard jam jar or large yogurt pot is just the right size to sit inside my kilner jars, and tiny yogurt pots or jars are often the right size to fit inside standard jam jars. So play around and see what you come up with. Typically, a jam jar filled with water (or, cunningly, another ferment) should be enough to keep your fermenting leaves submerged. This stage is



Use a tub or jar to keep the ferment submerged

important – do spend some time ensuring that your ferment is sealed by liquid from the air.

13. Leave to ferment at an ambient temperature. Resist all temptation to put the ferment in the fridge. The helpful bacteria that will preserve and give character are dormant at low temperatures. Do not be alarmed by white froth/bubbles forming – this is a normal part of the fermentation process. You can scrape the froth off if it disturbs you! Blue mould, blackening or a “cheesy” smell are not good signs – see below for trouble-shooting.

14. How long to leave the ferment? Leave it to ferment at ambient temperatures for at least a week, but as long as you wish. You can dip in and taste on a regular basis until you are happy with the flavour. After a week you should notice the characteristic slightly “fizzy” mouth-feel of all lacto-fermented greens (if you are not sure what this sensation is, buy any half decent sauerkraut from the shops and taste that). The greens should retain a surprising crunchiness for something that looks so wet and wilted. The sharp, pungent flavours (of wild garlic for example) should have mellowed into a rounder, more complex flavour. When you are happy with the flavour, remove the weighing-down item, put on the lid and keep in a cool place or the fridge. If you have fermented in a large vessel, it's best to re-jar the ferment in smaller jars for storage – this keeps air exposure to a minimum, especially if you ensure there is a covering of liquid. The ferment should keep well for several months in sealed jars, but consume them within a couple of weeks once you start using the jar.

TROUBLESHOOTING

If you are new to fermenting, I expect you will feel a bit anxious that the ferment will go “off”. I have never had any problems with the method above, except when I topped up a common hogweed ferment with tap water. The top level went black and it developed an unpleasant smell that was instantly recognisable as “off”. Observe your ferment and trust your senses. Blue mould, blackening and a cheesy smell are bad signs and usually occur because you haven't created anaerobic conditions and/or your vessel/plant matter wasn't clean. All may not be lost however: you can scrape off the top mouldy layer, top up with uncarbonated mineral water and give it another chance.

VARIATIONS

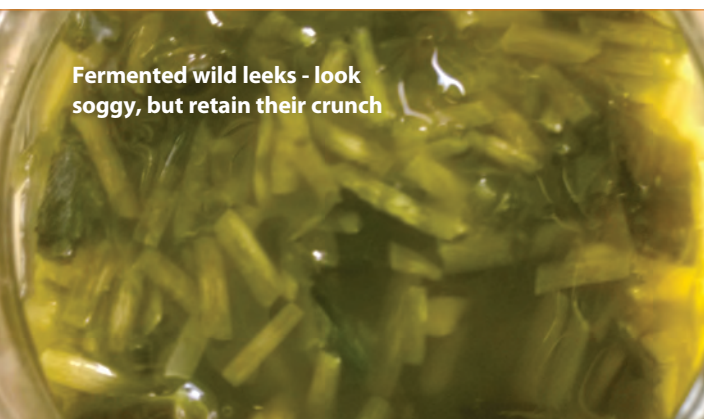
The simple alchemy of this preparation is part of its charm, but it is easy to add a few twists. Try adding nam pla (fish sauce), chilli and ginger to make Vietnamese style kimchi. Green hogweed seeds, sea rocket or wild garlic/leek capers add a bit of extra kick. Play around!

HOW TO EAT

Here's how I like to use fermented foraged greens:

- As a condiment – on the side of salads, stir-fries, curries etc.
 - As a part of a salad
 - As an ingredient stirred into stir-fries, risottos etc.
 - Great in cheese sandwiches or under cheese on toast
 - Can be cooked and puréed to make a rich green sauce
- Don't waste the fermenting liquid – add it to salad dressing, sauces or just drink it. I particularly like tequila and fermented wild garlic juice shooters!

Fermented wild leeks - look soggy, but retain their crunch



Kimich wild leeks (L) and fermented ramsons (R)

