



Plants For A Future

*Edible, medicinal and useful plants
for a healthier world*

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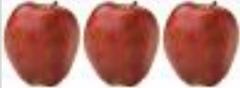
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Database Name:

Avena sativa - L.

Keyword:

Oats

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Author	L.	Botanical references	17
Family	Gramineae	Genus	Avena
Synonyms			
Known Hazards	None known		
Range	N. Europe. A non-persistent relic of cultivation in Britain [17].		
Habitat	Dry wasteland, cultivated ground and meadows, especially on heavier soils[200].		
Edibility Rating	 3 (1-5)	Medicinal Rating	 3 (1-5)

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Physical Characteristics



Annual growing to 0.9m by 0.1m.

It is hardy to zone 2 and is not frost tender. It is in flower from June to July, and the seeds ripen from August to October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Wind. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay and nutritionally poor soils. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It cannot grow in the shade. It requires dry or moist soil and can tolerate drought.

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Cultivated Beds;

Edible Uses

Edible Parts: [Seed](#).

Edible Uses: [Coffee](#); [Oil](#).

Seed - cooked[2, 34, 46, 177]. The seed ripens in the latter half of summer and, when harvested and dried, can store for several years. It has a floury texture and a mild, somewhat creamy flavour. It can be used as a staple food crop in either savoury or sweet dishes. Used as a cereal, it is probably best known as the breakfast cereal porridge but it can also be used in many other ways. The seed can be sprouted and used in salads[183], the grain can also be ground into a flour and used in making biscuits, sourdough etc[183]. It is fairly low in gluten, and so is not really suitable for making bread[269]. The seed is an especially good food for convalescents and people with stomach problems[13]. Oat flour produced in the dry-milling operation currently is used as an antioxidant in food products[269]. Oat flour inhibits rancidity and increases the length of shelf-stability of fatty foods such as vegetable oils[269]. Whilst cultivated oats average about 17% protein, scientists screening thousands of samples of cultivated and wild species found that the wild species averaged 27% with some forms ranging up to 37%[269]. Oats are also one of the cereals used as a basic ingredient for making whisky[7]. Oats are harvested when grain is in the hard dough stage and straw is slightly green (when the moisture content of the grain is 14% or less). If too ripe, shattering causes seed loss. Crop is usually cut with binder and left in the field until dry and then threshed. In mechanized societies, oats are combined directly from standing grain. For this type of harvesting, crop must be fully ripe, usually when the straw has lost greenness and glumes have become white. Crop may be combined from windrow, or cut with a header harvester when the crop is dead ripe. Seeds are threshed and cleaned by winnowing, and artificially dried to below 14% moisture for storage[269]. The roasted seed is a coffee substitute[177, 183]. An edible oil is obtained from the seed, it is used in the manufacture of breakfast cereals[61].

Medicinal Uses

[Anticholesterolemic](#); [Antispasmodic](#); [Cancer](#); [Cardiac](#); [Diuretic](#); [Emollient](#); [Nervine](#); [Nutritive](#); [Poultice](#); [Stimulant](#).

Whilst used mainly as a food, oat grain does also have medicinal properties[238]. In particular oats are a nutritious food that gently restores vigour after debilitating illnesses, helps lower cholesterol levels in the blood and also increases stamina[254]. The seed is a mealy nutritive herb that is antispasmodic, cardiac, diuretic, emollient, nervine and stimulant[4, 7, 21, 165]. The seed contains the antitumor compound b-sitosterol and has been used as a folk remedy for tumours[269]. A gruel made from the ground seed is

used as a mild nutritious aliment in inflammatory cases, fevers and after parturition[4]. It should be avoided in cases of dyspepsia accompanied with acidity of the stomach[4]. A tincture of the ground seed in alcohol is useful as a nervine and uterine tonic[4]. A decoction strained into a bath will help to soothe itchiness and eczema[254]. A poultice made from the ground seeds is used in the treatment of eczema and dry skin[238]. When consumed regularly, oat germ reduces blood cholesterol levels[238]. Oat straw and the grain are prescribed to treat general debility and a wide range of nervous conditions[254]. They are mildly antidepressant, gently raising energy levels and supporting an over-stressed nervous system[254]. They are of particular value in helping a person to cope with the exhaustion that results from multiple sclerosis, chronic neurological pain and insomnia[254]. Oats are thought to stimulate sufficient nervous energy to help relieve insomnia[254]. An alcoholic extraction of oats has been reported to be a deterrent for smoking, though reports that oat extract helped correct the tobacco habit have been disproven [269]. A tincture of the plant has been used as a nerve stimulant and to treat opium addiction. In an article riddled with errors, the *Globe* (February 28, 1984) reports that oat straw, usually taken as a tea, is a sexual nerve tonic[269].

Other Uses

[Biomass](#); [Cosmetic](#); [Fibre](#); [Mulch](#); [Paper](#); [Repellent](#); [Thatching](#).

The straw has a wide range of uses such as for bio-mass, fibre, mulch, paper-making, building board and thatching[74, 141, 171]. It has also been used as a stuffing material for mattresses and these are said to be of great benefit for sufferers from rheumatism[7, 254]. Some caution is advised in its use as a mulch since oat straw can infest strawberries with stem and bulb eelworm. Oat hulls are basic in production of furfural, a chemical intermediate in the production of many industrial products such as nylon, lubricating oils, butadiene, phenolic resin glues, and rubber tread compositions[269]. Oats hulls supply about 22% of the required furfural raw materials. Rice hulls, corn cobs, bagasse, and beech woods make up much of the remainder [269]. Oats hulls are also used in the manufacture of construction boards, cellulose pulp and as a filter in breweries[269]. A handful of the grains, thrown into the bath water, will help to keep the skin soft because of their emollient action[7]. An extract of oat straw prevents feeding by the striped cucumber beetle[269].

Cultivation details

Oats are an easily grown crop that succeeds in any moderately fertile soil in full sun[200]. They prefer a poor dry soil[134] and tolerate cool moist conditions[13]. Plants are reported to tolerate an annual precipitation of 20 to 180cm, an average annual temperature range of 5 to 26°C, and a pH of 4.5 to 8.6[269]. They thrive on a wide range of soils of ample, but not excessive, fertility[269]. Well-drained neutral soils in regions where annual rainfall is 77cm or more are best

[269]. Loam soils are best, especially silt and clay loams[269]. The plants are also reported to tolerate aluminium, disease, frost, fungus, herbicides, hydrogen fluoride, mycobacterium, nematode, rust, SO₂, smut, and virus[269]. Oats have a long history of cultivation as a food crop and are believed to be derived chiefly from two species, wild oat (*A. fatua* L.) and wild red oat (*A. sterilis* L.)[269]. They are widely cultivated for their seed, used as a source of protein, as well as for hay, as winter cover, and are used as a pasture crop in the growing or 'milk' stage[269]. Oats are long-day plants, grown in cool climates in the Old and New World temperate zones, succeeding under variable conditions[269]. Oats usually are not very winter hardy, although winter hardy cvs have been developed[269]. A very hardy plant according to another report, the cultivated oat succeeds as far north as latitude 70°n[142] and is widely cultivated in temperate zones for its edible seed, there are many named varieties [183]. Although lower yielding than wheat (*Triticum* spp.), it is able to withstand a wider range of climatic conditions and is therefore more cultivated in cooler and wetter areas[13]. Hot dry weather just before heading causes heads to blast and yields of seed to decrease [269]. Self-pollination is normal, but cross-pollination by wind also occurs[269]. If you wish to save the seed for sowing, each variety should be isolated about 180 metres away from other varieties[269]. Oats grow well with vetch but they inhibit the growth of apricot trees [18, 201]. Oats are in general easily grown plants but, especially when grown on a small scale, the seed is often completely eaten out by birds. Some sort of netting seems to be the best answer on a garden scale.

Propagation

Seed - sow in situ in early spring or in the autumn. Only just cover the seed. Germination should take place within 2 weeks.

Cultivars

There are many named varieties of this cultivated cereal, with new forms being developed each year. At present there is not time to enter these in the database.

Links

References

[2] **Hedrick. U. P.** *Sturtevant's Edible Plants of the World*. Dover Publications 1972 ISBN 0-486-20459-6

Lots of entries, quite a lot of information in most entries and references.

[4] **Grieve.** *A Modern Herbal*. Penguin 1984 ISBN 0-14-046-440-9
Not so modern (1930's?) but lots of information, mainly temperate plants.

[7] **Chiej. R.** *Encyclopaedia of Medicinal Plants*. MacDonald 1984
ISBN 0-356-10541-5

Covers plants growing in Europe. Also gives other interesting information on the plants. Good photographs.

[13] **Triska. Dr.** *Hamlyn Encyclopaedia of Plants*. Hamlyn 1975 ISBN
0-600-33545-3

Very interesting reading, giving some details of plant uses and quite a lot of folk-lore.

[17] **Clapham, Tootin and Warburg.** *Flora of the British Isles*.
Cambridge University Press 1962

A very comprehensive flora, the standard reference book but it has no pictures.

[18] **Philbrick H. and Gregg R. B.** *Companion Plants*. Watkins 1979
Details of beneficial and antagonistic relationships between neighbouring plants.

[21] **Lust. J.** *The Herb Book*. Bantam books 1983 ISBN 0-553-23827-
2

Lots of information tightly crammed into a fairly small book.

[34] **Harrison. S. Wallis. M. Masefield. G.** *The Oxford Book of Food
Plants*. Oxford University Press 1975

Good drawings of some of the more common food plants from around the world. Not much information though.

[46] **Uphof. J. C. Th.** *Dictionary of Economic Plants*. Weinheim 1959
An excellent and very comprehensive guide but it only gives very short descriptions of the uses without any details of how to utilize the plants. Not for the casual reader.

[61] **Usher. G.** *A Dictionary of Plants Used by Man*. Constable 1974
ISBN 0094579202

Forget the sexist title, this is one of the best books on the subject. Lists a very extensive range of useful plants from around the world with very brief details of the uses. Not for the casual reader.

[74] **Komarov. V. L.** *Flora of the USSR*. Israel Program for Scientific
Translation 1968

An immense (25 or more large volumes) and not yet completed translation of the Russian flora. Full of information on plant uses and habitats but heavy going for casual readers.

[134] **Rice. G. (Editor)** *Growing from Seed. Volume 2*. Thompson
and Morgan. 1988

Very readable magazine with lots of information on propagation. An interesting article on *Ensete ventricosum*.

[141] **Carruthers. S. P. (Editor)** *Alternative Enterprises for
Agriculture in the UK*. Centre for Agricultural Strategy, Univ. of
Reading 1986 ISBN 0704909820

Some suggested alternative commercial crops for Britain. Readable. Produced by a University study group.

[142] **Brouk. B.** *Plants Consumed by Man.* Academic Press 1975
ISBN 0-12-136450-x

Readable but not very comprehensive.

[165] **Mills. S. Y.** *The Dictionary of Modern Herbalism.* 0
An excellent small herbal.

[171] **Hill. A. F.** *Economic Botany.* The Maple Press 1952
Not very comprehensive, but it is quite readable and goes into some
a bit of detail about the plants it does cover.

[177] **Kunkel. G.** *Plants for Human Consumption.* Koeltz Scientific
Books 1984 ISBN 3874292169
An excellent book for the dedicated. A comprehensive listing of latin
names with a brief list of edible parts.

[183] **Facciola. S.** *Cornucopia - A Source Book of Edible Plants.*
Kampong Publications 1990 ISBN 0-9628087-0-9
Excellent. Contains a very wide range of conventional and
unconventional food plants (including tropical) and where they can be
obtained (mainly N. American nurseries but also research institutes
and a lot of other nurseries from around the world.

[200] **Huxley. A.** *The New RHS Dictionary of Gardening.* 1992.
MacMillan Press 1992 ISBN 0-333-47494-5
Excellent and very comprehensive, though it contains a number of
silly mistakes. Readable yet also very detailed.

[201] **Allardice.P.** *A - Z of Companion Planting.* Cassell Publishers
Ltd. 1993 ISBN 0-304-34324-2
A well produced and very readable book.

[238] **Bown. D.** *Encyclopaedia of Herbs and their Uses.* Dorling
Kindersley, London. 1995 ISBN 0-7513-020-31
A very well presented and informative book on herbs from around the
globe. Plenty in it for both the casual reader and the serious student.
Just one main quibble is the silly way of having two separate entries
for each plant.

[254] **Chevallier. A.** *The Encyclopedia of Medicinal Plants* Dorling
Kindersley. London 1996 ISBN 9-780751-303148
An excellent guide to over 500 of the more well known medicinal
herbs from around the world.

[269] **Duke. J.** *Handbook of Energy Crops - 1983*
Published only on the Internet, excellent information on a wide range
of plants.

Readers Comments

Avena sativa

alfredo Wed Oct 20 17:30:17 2004

Well, I have a borderline syndrom all my life. Sleeplesness scince 1984 and very sharp depressions. But, I am still alive.

I get al lot of medication, Tryptizol 300 mg. a day, and dalamdorm 30 mg. and Buspar 30 mg.

Scince a few years I am glad to use the herbs Hypericum (yes, I know the interaction) , L-Tryptophaan and Eleutherococcus (Sib. Ginseng).

In a deep depression, two months ago, I took some raw OATSTRAW, mixed it with some yoghurt and - véry unexpectedly - a great calm came over me, while my chest went wide open=sitting straight.All by itself, completely unexpected !

Véry strange, because I eat one KILO oats in a week, as breakfast It gives me lot of energy, but is nót a nerv-tonic at all.

So OAT STRAW seems to be doing a very good job. There are NO seeds in my oatstraw. I just bought a kilo at a wholesaler for a few euro's. I just took about 10 grams.(in my case, that's a little)

STRANGE, BUT VERY TRUE IN MY CASE !!!!!!!!!!!!!!!

Greatings from Amsterdam.

Avena sativa

alfredo Wed Oct 20 17:50:04 2004

P.S.

The Oatstraw is dry.

This website is véry well documented.

Avena sativa

syd Sun Dec 26 15:34:16 2004

alfredo- thanks for the information!

i am going to purchase some and give it a try.

i have bad respiratory system, do you suggest inhaling the smoke in a herbal mix?

Link: [tired of being alive](#)

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Note: please don't expect a quick reply to comments/questions posted here? We don't have the resources to answer questions ourselves. You can ask questions on our [mailing list](#).

Subject: Avena sativa

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