

Weed Management in Organic Lettuce

About the crop:

- Lettuce (*Lactuca sativa* L.) is an annual salad vegetable grown for its leaves. The outdoor crop is generally available from early May until November. The earliest crops are produced from transplants set out in late February and early March. Earliness can be enhanced by growing under plastic or fleece covers
- There are four types of lettuce:
 - Crisphead, with thick crisp leaves in a tight head marketed as 'Iceberg' lettuce, or in less dense heads as 'Webbs'
 - Butterhead or flat lettuce, with thinner, soft tender leaves forming a tight flat head
 - Cos, with long upright leaves in loose elongated heads with a conical heart
 - Continental or loose-leaf, none heading types e.g. Salad Bowl
- Lettuce are grown on both mineral soils and peaty moss soils. It is possible to grow lettuce on a wide range of soils but the ideal is a well drained, light textured, moisture retentive soil that can be worked easily
- Lettuce is sensitive to soil acidity and the pH should be 6.8 for mineral soils and 6.0 for peats. Plants grown below this become stunted and develop reddened leaves
- The bed system is ideal for growing lettuce. The crop is established using conventional primary and secondary cultivations
- The crop may be drilled directly or raised in blocks or modules and transplanted using self-propelled or tractor mounted equipment. Transplanting ensures a more uniform crop, enables better planning for continuity and can produce higher yields but is more demanding on labour and expense



Lettuce variety trials

How can weed problems be reduced?

- The site should be free of perennial weeds
- The seedbed should have a fine tilth and if prepared early enough there will be an opportunity for a weed strike and final shallow cultivation to reduce the weed population before planting
- Precise row spacing and careful alignment of cultivating tools facilitate mechanical weed control
- Closer spacing of lettuce may suppress weeds better but it will make mechanical or even hand weeding difficult should it become necessary. A minimum row spacing of 25 cm is needed to allow mechanical weeding
- Plastic mulches can be used for transplanted crops, but may encourage slugs or overheat roots in hot weather

Direct weed control

- One or more passes with a brush weeder, steerage hoe or tine weeder may be required depending on the weed population, careful setting is needed to avoid tearing leaves
- All can be equally effective but brushes are better in wetter conditions otherwise dust can be a problem
- A first pass may be needed 3-4 weeks after planting or at 2 weeks for later crops
- Hand-labour is not normally needed but has been estimated at 20-25 man hrs/ha. Tractor hoeing will take 5-6 hrs/ha
- Flame weeding applied post weed emergence and before lettuce planting is most successful when weeds are small
- In field trials in the drilled crop, if weeds were removed no later than 3 weeks after 50% crop emergence and the crop then kept weed-free there was no loss of yield. Equally if the crop was kept weed-free for the first 3 weeks after 50% crop emergence there was no yield loss. Hence a single weeding at 3 weeks after 50% crop emergence was sufficient to prevent crop losses due to weeds
- Fleece covers are sometimes used for early production and for pest control. Weeds also benefit from the conditions under the covers, emerging in greater numbers and growing faster

For further information on weed management go to www.gardenorganic.org.uk/weed-management. There you will find the following:

- ◆ Advice on over 130 individual weeds, from Black Grass to Yarrow www.gardenorganic.org.uk/weeds-list
- ◆ Advice on cultivation controls, such as crop rotation, tillage and hygiene www.gardenorganic.org.uk/cultural-weed-controls
- ◆ Direct control methods, such as mulching and mechanical control www.gardenorganic.org.uk/direct-weed-controls
- ◆ Crop weeding strategies, in field vegetables, fruits and grasslands www.gardenorganic.org.uk/crop-weed-management-strategies
- ◆ Further reading in research papers.



Formerly HDRA.

This leaflet was produced as part of the 2006 DEFRA funded project '[Participatory Investigation of the Management of Weeds in Organic Production Systems](#)'. Organisations involved included HDRA, The Organic Research Centre, Warwick Horticultural Research International, ADAS, and Rulivsys. The information has been produced from a range of sources, including farmers, advisors and researchers, and we gratefully acknowledge their contributions. It is one of a number of leaflets written to give an overview of non-chemical weed control opportunities and developments in the crops covered. They include historical information and summaries of more recent research.

Disclaimer

The information contained in this leaflet has been compiled from a range of sources. It is accurate to the best of our knowledge. Authors are not responsible for outcomes of any actions taken based on this information.

