

The biology and non-chemical control of Annual Mercury (*Mercurialis annua* L.)

W Bond & G Davies

HDRA, Ryton Organic Gardens, Coventry, CV8, 3LG, UK

Annual mercury *Mercurialis annua* L.

Occurrence

Annual mercury is annual weed, possibly a native on cultivated land and waste places (Stace, 1997). It is also a garden weed and is widespread but local in southern England (Clapham *et al.*, 1987). Although of local occurrence it can be troublesome on lighter soils (Salisbury, 1961). It is indifferent to lime and prefers a loose loam or sandy-loam soil (Hanf, 1970). Annual mercury occurs in urban situations and can tolerate arid conditions (Benvenuti, 2004). It is not recorded above 1,000 ft in the UK.

Annual mercury was found in 3% of conventional sugar beet crops surveyed in East Anglia in autumn 1998 (Lainsbury *et al.*, 1998).

Annual mercury was regarded as a valuable purgative (Salisbury, 1962). It is also rich in potassium (Barker, 2001). The plant is poisonous if eaten by livestock, the seeds being the most poisonous (Forsyth, 1968). However, it is important in the diet of bullfinches (Lainsbury *et al.*, 1998).

Biology

Annual mercury flowers from July to October (Clapham *et al.*, 1987). The male and female flowers are on separate plants (Stace, 1997). It can be found in fruit for 4 months of the year (Salisbury, 1962).

Seed germination occurs intermittently from May to early September.

At early plant growth stages, mineral uptake by annual mercury is high, an important factor in interspecific plant competition (Magyar & Hunyadi, 1999).

Persistence and Spread

Seed longevity in dry storage is 8-10 years and in soil is 6-7 years (Guyot *et al.*, 1962). Seed dry-stored for 40 years gave less than 1% germination (Crocker, 1938).

Seeds are dispersed explosively and may be carried by ants (Salisbury, 1961).

Management

In conventional horticultural systems, the frequency of annual mercury increased following winter brassica crops (Atkins & Burn, 1991).

Annual mercury seed is susceptible to soil solarization.

References

- Atkins P & Burn A J** (1991). The future of weed control in UK horticulture: a growers view. *Proceedings of the Brighton Crop Protection Conference – Weeds*, Brighton, UK, 573-580.
- Barker J** (2001). *The medicinal flora of Britain and Northwestern Europe*, Winter Press, West Wickham, Kent, UK.
- Benvenuti S** (2004). Weed dynamics in the Mediterranean urban ecosystem: ecology, biodiversity and management. *Weed Research* **44**, 341-354.
- Clapham A R, Tutin T G, Moore D M** (1987). *Flora of the British Isles*, 3rd edition, Cambridge University Press, Cambridge, UK.
- Crocker W** (1938). Life-span of seeds. *Botanical Revue* **4**, 235-274.
- Forsyth A A** (1968). British poisonous plants. *MAFF Bulletin No. 161*, HMSO, London.
- Guyot L, Guillemat J, Becker Y, Barralis G, Demozay D, Le Nail Fr** (1962). *Semences et Plantules des Principales des Mauvaises Herbes*. Association de Coordination Technique Agricole, Paris.
- Hanf M** (1970). *Weeds and their seedlings*. BASF UK Ltd.
- Lainsbury M A, Hilton J G, Burn A** (1999). The incidence of weeds in UK sugar beet crops during autumn 1998. *Proceedings Brighton Crop Protection Conference - Weeds*, Brighton, UK, 817-820.
- Magyar L & Hunyadi K** (1999). Study of *Mercurialis annua* L. mineral uptake under field conditions in Northwestern Hungary. *Proceedings of the 11th EWRS Symposium*, Basel, 27.
- Salisbury E J** (1961). *Weeds & Aliens*. New Naturalist Series, Collins, London.
- Salisbury E** (1962). The biology of garden weeds, Part I. *Journal of the Royal Horticultural Society* **87**, 338-350 & 390-404.
- Stace C** (1997). *New Flora of the British Isles*. 2nd edition. Cambridge University Press, Cambridge, UK.