

What Makes a Weed a Weed?

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The quest to define the term “weed” is almost as interesting as the search to find successful methods of controlling weeds. The web site, <http://www.geocities.com/researchtriangle/thinktank/8204>, records many attempts to define the term weed, including the following:

- “A weed is a plant in a place where it is not wanted”
- “Environmental weeds are plants that invade native vegetation, usually adversely affecting regeneration and survival of the indigenous flora and fauna”
- “Weed is a concept created by bipeds to justify the control and extermination of unwanted plants”
- “A weed is a plant whose virtues are yet to be discovered”

Weeds can inspire many emotions in people from anger and frustration through to admiration and passion. The botanist who named Shepherd’s purse, *Capsella bursa-pastoris*, was deeply moved, not by the heart-shaped seed case, but by its resemblance to the scrotum of sheep.

What makes many plants so successful as weeds? Listed below are some of the features that would be possessed by the ideal weed:

High Seed Production. Shepherd’s purse can produce around 30,000 seeds per plant while gorse, *Ulex europaeus*, can build up seed banks in the soil of over 100 million seeds per hectare (Parsons and Cuthbertson, 1992). In astrology, gorse appropriately typifies “cheerfulness in adversity”

Easily Dispersed Seed. For example:

- Wind: pampas grass, *Cortaderia* spp. and dandelion, *Taraxacum officinale*.
- Water: dock, *Rumex* spp.
- Birds: *Cotoneaster* spp. and blackberry, *Rubus fruticosus*.
- Ants: gorse.
- Cats: cleavers, *Galium aparine*.
- Grazing animals: storksbills, *Erodium* spp.
- Pod explosion: flickweed, *Cardamine hirsuta*.

Long Seed Dormancy. Gorse can retain up to 85% seed viability after 25 years in the ground (Parsons and Cuthbertson, 1992).

Rapid Growth Rates. For example: chickweed, *Stellaria media*.

Climbing Habit. For example: banana passionfruit, *Passiflora mollissima*.

Difficult to Remove by Hand. For example: sow thistle, *Sonchus oleraceus*.

Vegetative Methods of Reproduction or Spread. The “weeds of cultivation”:

- Rhizomes: bracken, *Pteridium esculentum*.
- Bulbs: soursob, *Oxalis pes-caprae*.

Repel Predators or Grazing Animals.

- Toxic: ragwort, *Senecio jacobaea*.
- Spines: boxthorn, *Lycium ferocissimum*.

Tolerance to Chemicals. For example: to glyphosate — willow herb, *Epilobium* sp.

High Ornamental Value. For example: *Cotoneaster* spp.

Resemble Native Species. For example: Spanish heath, *Erica lusitanica*.

Be a Native Species. For example: *Acacia pycnantha* has now become a weed in parts of Tasmania following patriotic efforts to plant Australia's floral emblem.

Many of the plants given as examples in the above lists also may be regarded as virtuous weeds. Fennel, *Foeniculum vulgare*, frequently regarded as a roadside weed, is now widely grown as an essential oil crop in Tasmania. Variegated thistle, *Silybum marianum*, has long been recognised as a weed. However, attempts in Tasmania to cultivate it as a commercial crop for alkaloid production failed when the monoculture stands of thistles were ravaged by fungal disease. More recently I have heard of variegated thistle being used as a window box display plant, prized for its showy foliage and resistance to vandalism.

However, discovering a virtue or economic value for a "weed" usually raises a whole new set of problems.

Perhaps the most spectacular case of "virtuous weed syndrome" has occurred recently with St. John's wort, *Hypericum perforatum*. Despite being on the noxious weed list in several states, vast amounts were being imported by herbal companies as St. John's wort outsold echinacea to become the most popular herbal remedy in the world. With reputed claims of curing bed-wetting, insomnia, nervous problems, gout, witches, and the added bonus of being able to dream of future lovers the spectacular sales are not surprising.

Farmers who once battled St. John's wort are now being paid up to \$1500 per tonne wet weight to grow and harvest the weed. This makes it more valuable than some pastures and now growers are trying to develop management techniques to suppress the weedy pasture and maintain purity in their stands of St. John's wort.

After all it is mainly a matter of how us bipeds view the situation. An article by Kate de Selincourt (1992) describes how Australian weeds such as *Hakea lissosperma* [syn. *H. sericea*], *Acacia longifolia*, and *Acacia mearnsii* are wreaking havoc on the South African native bush. Presumably they are replacing such delicate local plants as cape ivy (*Delairea odorata*), bridal creeper (*Myrsiphyllum asparagoides*), boxthorn (*Lycium ferocissimum*), and boneseed (*Chrysanthemoides monilifera*).

LITERATURE CITED

de Selincourt, K. 1992. South Africa's other bush war. *New Scientist* 15:36-39.

Parsons, W.T. and E.G. Cuthbertson. 1992. *Noxious weeds of Australia*. Inkata Press, Melbourne.