

What on Earth is a Weed?!



In the simplest of terms, a weed is a plant growing out of place; what is a weed for a cattle beast, may not be a weed for sheep, or even a weed in a crop. Weeds are nature's guardians or repairers and the indicators they offer can provide those willing to listen valuable insights into soil health. There are five main (& related) reasons why weeds grow:

1. To quickly protect bare/disturbed soil
2. Low organic matter
3. Balance mineral
4. And microbial imbalances
5. As a safety valve for toxins.

Many weeds are adapted to colonise disturbed areas and help the soil building process, this is referred to as 'plant succession'. Deep rooted weeds mine minerals from deeper down in the subsoil, feed micro-organisms and build humus, creating a more favourable soil environment for higher plant species, such as grasses. This is not an overnight process!

How weeds grow, above and below ground, can offer clues to their soil repairing role; scrambling weeds offer protection to soil surfaces and help prevent the loss of valuable carbon.

While deep tap rooted weeds, such as dock and californian thistles (with root depths up to 20 feet deep) provide services; opening up tight soils, transporting nutrients from the subsoil and creating channels for air and water. Shallow roots can indicate high water tables, compaction and overgrazing. Grazing management is an important tool for managing weeds, often shallow rooted weeds prefer set stocking and short covers, as they are outcompeted by grasses with longer grazing rounds.

Disturbance events (pugging, high salt, herbicides, fire, waterlogging etc) push environments back to more primitive

Bare Rock	Lichens, Mosses	First Upright Plants	Primitive Grasses	Prairie Grasses	Primitive Shrubs	Mature Hardwood Forest	Conifer Forest
Bacterial 1000:1		Bact:Fungal 1:1			Fungal 1:1000		

bacterially dominated states, as fungi and the higher soil organisms can be more vulnerable to disturbance events. These imbalances can all create favourable soil conditions for weeds to germinate. Alternatively, by using regenerative soil practices which change the soil environment to suit more advanced pasture species and crops, the weeds are out-competed.

Build it and they will come: The weed seed-bank in the soil can be massive; a single ragwort plant can produce 150,000 seeds, viable in the soil for over 15 years. There can also be 400 to 1200 clover seeds in a square meter of soil, yet not a single visible clover. Many farmers/growers using regenerative soil practices see clover naturally return over time.

A large number of weeds indicate low functional calcium, especially coarse grass weeds, while broadleaf weeds can indicate high available potassium and low phosphorus. Some "weeds" act like safety valves to remove high levels of toxins and nitrates out of the soil. They can also quickly cover and remineralise the soil, feed microbes and create ground cover thus fulfilling all five roles at once. These plants are very fast growing and often soft. They are definitely "repair plants" to detoxify the soil and move the nitrate out of the soil, into the plant structures and then die to return to the soil in the form of organic matter without the nitrate in it. E.g. Nettles, fat hen, barley grass and cape weed.

A weed can indicate a number of different environmental factors, so observing the whole picture is vital; dig a hole, observe patterns, record changes, take herbage tests, note previous management or climactic conditions and set up some trials for yourself. This all helps to build your own knowledge bank.