

More than one way to mulch

By GREG PAYNTER

MULCHING CAN PROVIDE farmers with a means of building organic matter, controlling weeds and increasing soil water-holding capacity.

Why mulch? Through innovative design by practitioners, mulching can be a key tool in achieving efficient outcomes including nutrient cycling, water efficiencies, ground cover, habitat maintenance and soil temperature stabilisation.

Mulching protects soil – nature abhors bare soil – and prevents erosion of the finite soil resource. It prevents weed growth by closing ecological niches where weeds like to grow. It ensures a narrower temperature gradient between day and night soil temperatures, which saves plant metabolic energy to be utilised in plant growth, resulting in more productive outcomes. Mulching not only improves soil water-holding capacity but improves water quality within the catchment.

Mulching materials come in many types and varieties with differing applications requiring different levels of human intervention. Two common types of mulching outlined in this article are living mulches (where a non cash crop is ploughed-in or planted into) versus plastic sheeting.

However, mulching is a valuable practice that also allows the practitioner to recycle waste product from or near the environment of their operation. Any organic material can be utilized that is readily available. Cane mulch (a by-product of cane production) or olive husks (from olive processing) are two basic examples of would-be waste product that – by collection and processing – can prove a valuable resource when used as mulch.

Crops can also be grown to provide mulching material, excessive growth can be harvested and reutilised as mulch and trees

can be chipped as a longer-term form of mulch.

The questions to ask when considering mulching are: What can you use from your environment that can be utilised for mulching purposes? How can it be applied? And what outcomes will it provide you? Operators are limited only by their powers of observation and capacity for practical implementation.

Good organic practice emulates nature's expertise. Mulching can be likened to the natural processes of a forest where leaf litter 'mulch' effectively recycles nutrients and preserves water and warmth – the key elements of plant growth.

Mulching methods

Pasture cropping: Broadacre systems can utilise methods such as pasture cropping, where cash crops can be planted into the dormant phases of a pasture already in existence. This allows for 100% groundcover 100% of the time. Different pasture crops have different phases of growth that farmers can utilise to grow a variety of crops. This method allows land to be used for both grazing and cropping and increases the land areas productive capacity over time. It also an example a 'polycultural approach' that allows one part of the system to provide mulch and associated benefits to another part of the production system. The system requires little human input and can be easily managed as pasture is perennial-based and cropping cycles are annual-based.

No-till: No-till cropping systems use a cover crop that is rolled down at the flowering stage as a mulch layer to plant a cash/annual crop into. This system requires greater human intervention as the cover crop needs to be planted prior to being rolled down. This system can also be used in horticultural enterprises, as can similar systems such as 'smart clover'.

When a clover stand dies off, the resulting (legume-based) mulch mat can be utilised as ground cover for a horticultural crop, also

providing nutrition for a following cash crop.

Plastic sheeting: Organic standards do allow for the use of plastic provided it is removed from the soil at the end of the planting cycle and disposed of in an environmentally friendly manner. Some organic growers use this practice while others argue that it is not ecologically sustainable, noting the high embedded energy cost of the mulch material and its non-renewable properties. Some research has been done into biodegradable plastic mulch as a softer alternative.

Practices that utilise renewable resources or are ecologically designed are the preferred options for good organic practice. Intelligent adaptations of mulching give multifunctional and productive outcomes for both the practitioner and the environment. 🌱



Contact Greg Paynter, Organic Advisory Service, email: greg.paynter1@bigpond.com, mobile: 0424 092 064.

FURTHER INFORMATION:
Biodegradable plastic mulch (trials in the Bowen and Gumlu districts, Queensland): contact Susanne Heisswolf, Agri-Science, Queensland, phone: (07) 4761 4000, email: susanne.heisswolf@deedi.qld.gov.au;
No-till cropping systems: visit www.newfarm.org or obtain Horticulture Australia report *No-till, permanent bed, vegetable production systems best practice manual* (Project no: VX01033);
Soil sequestration and deep-rooted perennials: Dr Christine Jones, visit <http://renewablesoil.com/dr-christine-jones.html>.

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