

The Effect of Mulching and Soil Amelioration on Soil Moisture Status

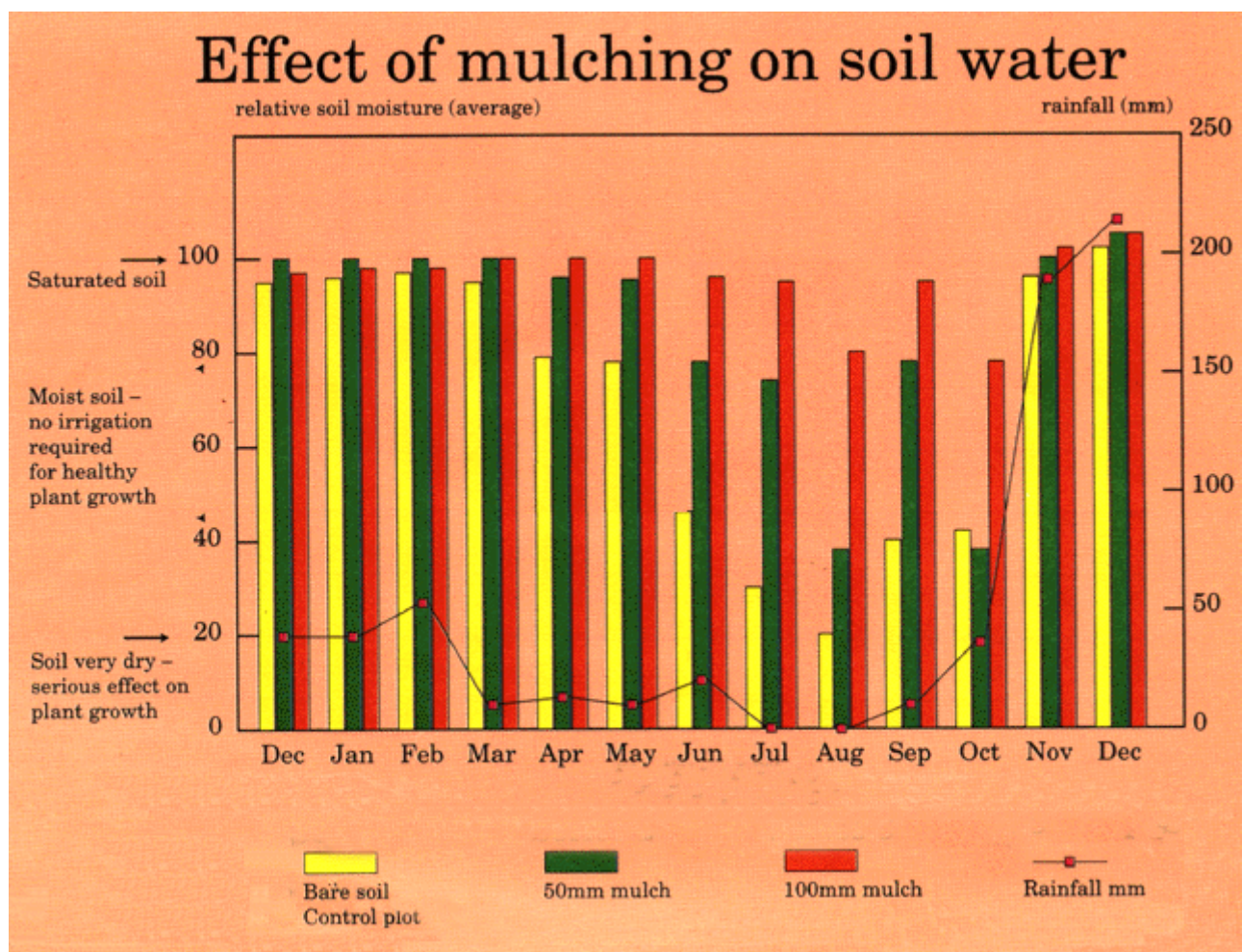
Objective

- Melcourt recently undertook an extensive field trial to investigate more closely, the true effects of mulching and soil amelioration on surface evaporation of soil moisture.

Method

- Plots were prepared comparing two spreading depths of Melcourt Ornamental Bark Mulch and Melcourt Composted Fine Bark incorporated into the top 150mm soil, with bare unamended soil.
- At the start of the trial during November, the plots were irrigated to saturation, after which the only further water received was the natural rainfall.
- Moisture levels in the soil were determined twice a week for an entire year using tensiometers, instruments which measure the tension with which moisture is held in the soil. The higher the tension, the less water there is.
- Temperatures and rainfall were also recorded for the period.

Results

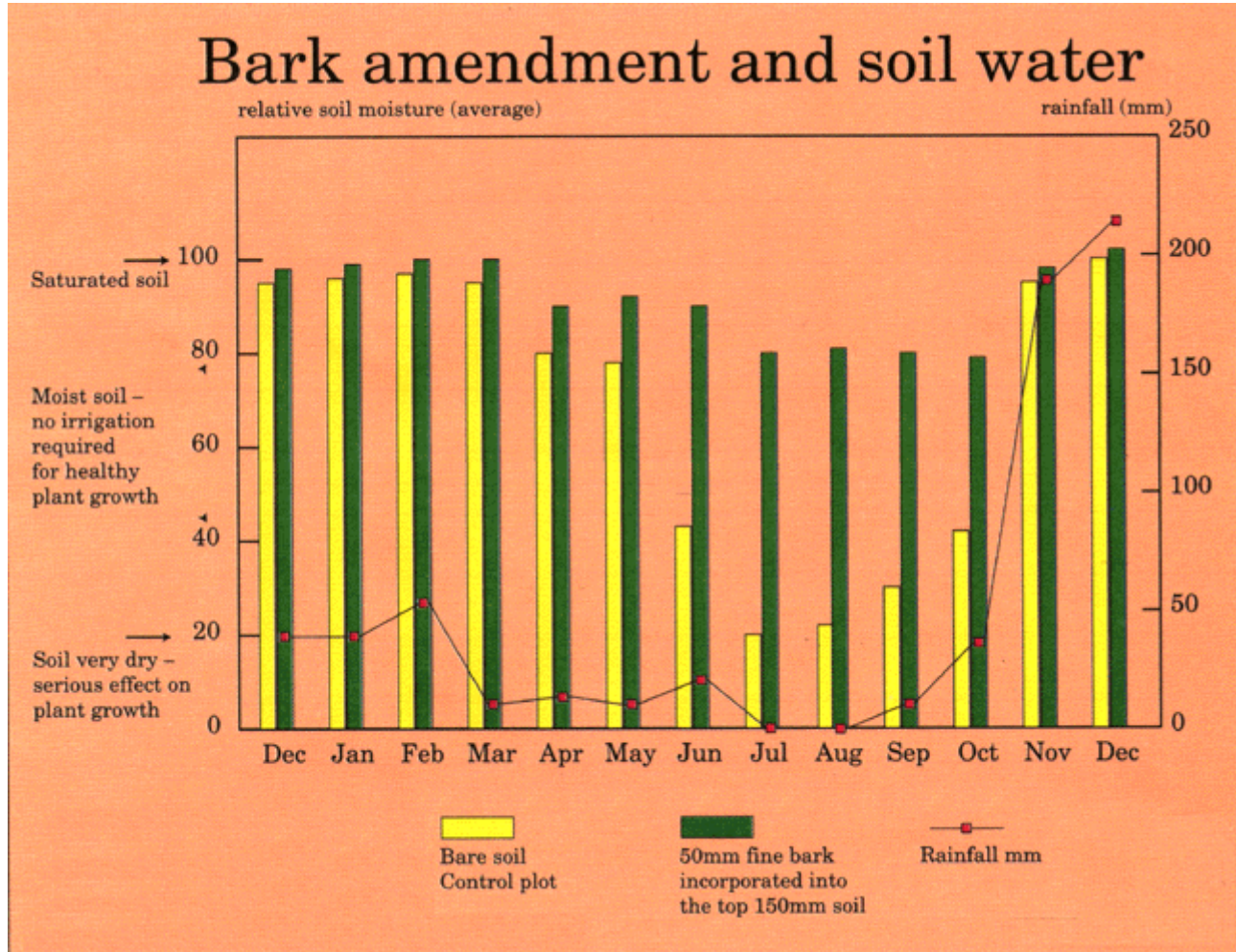


- The graph above shows that, as rainfall levels dropped, the bare soil of the control plot had dried out to such an extent by July, that the moisture level in the soil was at a level low enough to have caused serious threats to any plants growing in it.

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The Effect of Mulching and Soil Amelioration on Soil Moisture Status (Continued)

- By contrast, the plot mulched to the 100 mm depth with Ornamental Bark Mulch gave excellent resistance to drying out, and even in such extreme conditions as were experienced in that summer, never became dry enough for even the remote risk of plant death due to drought.
- The plots mulched to 50 mm also dried out much less quickly than the control, only getting into the danger zone for plants during August and quickly recovering as soon as the rains returned in September.
- Surface evaporation is only one way in which soil water is lost. Weed growth also causes the loss of moisture due to transpiration. The use of mulches to suppress weed growth is well established. This trial confirms that an effective mulch also gives excellent protection against moisture loss due to surface evaporation.



- The second graph shows that incorporating Composted Fine Bark into the soil was almost as effective as the 100 mm mulch, and certainly more effective than the 50 mm mulch.
- It is perhaps a less established fact that incorporation of an appropriate organic soil ameliorant, as well as having great potential benefits for soil structure and plant establishment, can also give good protection to newly planted plants against drought conditions.
- Product quality is, however, important. The bark used in this trial was well-matured mixed conifer bark of particle size range, fines up to 20 mm.

Conclusion

- This trial confirmed that Melcourt Ornamental Bark Mulch and Melcourt Composted Fine Bark give excellent protection against moisture loss due to surface evaporation.



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