

WATER USE ON ORGANIC FARMS



There is ample anecdotal and some experimental evidence that organic farms use less water than conventional farms says AOJ Media Consultant, Tim Marshall.

Anecdotal evidence from many growers, especially irrigation users, indicates that organic growers apply water less often than similar non-organic growers. This is largely due to increased soil moisture storage in organic soils that are well supplied with organic matter; and to the use of simple cultural practices on organic farms, such as soil mulching.

Better water use on organic farms may also be due in part to greater awareness of water management issues by organic farmers, including plant requirements and irrigation programming. There may also be a greater willingness to directly observe soil moisture, or to use remote sensing devices to manage irrigation.

It is also probable that non-use of very-soluble fertilisers and long-lasting pesticides on organic farms should mean that they contribute less to off-farm water quality issues than conventional farms.

WATER RESOURCE ISSUES

In previous decades the efforts of the conservation movement was largely focused on problems of soil erosion and vegetation management. Over the years the emphasis has changed, based upon a developing scientific understanding of ecological processes and an analysis of the sociological impact of the conservation message and the efficacy of its delivery. The way we now think about the impact of land management on the natural environment has matured into two key frameworks, 'water' and 'biodiversity'.

Water and biodiversity are now well established as critical systems, upon which many of the 'services' delivered by natural environment utterly depend. These systems now drive not only much of

the scientific approach to the environment, but also the funding of landcare projects and environmental restoration.

Several decades ago organic farmers had a clear lead over almost all other farmers with respect to care for the general environment of the farm. The gradual increase in knowledge in the broader farming community with respect to the impact of farming, a much greater concern and emphasis upon sustainability, vegetation management and environmental repair, has now eroded that lead considerably.

There is currently a much greater need to provide hard research evidence that organic farming is better for the environment, and to use the mechanism of standards and certification to ensure that organic farming methods *do* conserve and grow soil, protect biodiversity, maintain water quality and use water efficiently and responsibly.



The most recent version of the IFOAM Basic Standard (IBS) recommends that organic operators should:

- minimize loss of topsoil through minimal tillage, contour plowing, crop selection, maintenance of soil plant cover and other management practices that conserve soil
- take measures to prevent erosion, compaction, salination, and other forms of soil degradation
- use techniques that conserve water, such as increasing organic matter content of soil, timing of planting and the appropriate design, efficiency and scheduling of irrigation practices
- apply water and inputs in a way that does not pollute water by runoff to surface water or leaching into ground water
- use processing and handling systems that permit the responsible use and recycling of water without pollution or contamination either by chemicals or pathogens
- plan and design systems that use water resources responsibly and in a manner appropriate to local climate and geography
- develop management plans that anticipate, address, and mitigate impacts on water resources, including

but not limited to the application of manure, stocking densities, application of soluble fertilizers, and effluent from processing and handling facilities

- respect sustainable resource management and the common good

The IBS requires, as a minimum, that organic operators shall:

- take defined and appropriate measures to prevent erosion
- restrict land preparation by burning of vegetation to the minimum
- return nutrients, organic matter and other resources removed from the soil through crop production, harvesting, processing and handling systems by the recycling, regeneration and addition of organic materials and nutrients
- not degrade land or pollute water resource by grazing management

The IFOAM Standards Committee has made public its intention to continue to focus on environmental management, and specifically water and biodiversity, in future revisions of the IBS.

In the light of this announcement from the IFOAM Standards Committee, and fueled by consumer and grower concerns and by the challenge from conventional

producers who continue to improve their own sustainability, a number of water related issues have currency in international organic forums. These issues include water quality, water quantity and water pricing policy.

The use of recycled water is one of the hottest issues, as the reuse of water seems to be an obvious sustainability goal in our dry country. In organic growing, however, this must be balanced against strict water quality parameters designed to limit the addition of pesticide residues and other contaminants to the land. There is increasing emphasis on the requirement to know the quality of all water used to irrigate organic farms, including the possibility of requiring mineral analysis as a risk management procedure. In some farming areas, such as the Northern Adelaide Plains (Virginia and Two Wells) the requirement to not use recycled water from Bolivar sewage treatment works is severely limiting potential conversion of hundreds of hectares of intensive vegetable production.

Organic farmers in other areas may still be using water from subterranean aquifers that are overexploited and unsustainable. Similarly the construction of farm dams may not always respect the requirement of natural systems for environmental flow. At present organic inspection systems evaluate on-farm sustainability issues and may consider salinity impacts, but often miss other off-farm impacts of water use.

There is a need to substitute cleaning of drip irrigation equipment with chemical agents with the use of natural cleaning products such as citric acid.

While these and other issues continue to attract attention and foster debate at IFOAM and elsewhere in the organic industry, we may also be cautious about over-emphasis on single-factor sustainability issues. In the Willunga and McLaren Vale area, south of Adelaide, an established organic almond industry has been almost entirely routed by water pricing policy designed to move producers away from water guzzling crops to more financially rewarding viticulture enterprises. While grapes do return a greater profit per kilolitre of water used, the impact on the landscape of the developing monoculture, known locally as 'the green cancer', remains contentious. Sustainability in this instance was measured only in terms of water use, and the economic analysis did not consider the premiums received by organic producers (up to 100%). Pesticide use in the district has almost certainly increased and the disappearing heritage and tourism values of this previously mixed farming area are largely ignored in the government vision of sustainable agriculture for this region.

