

Covering Sheets in Orchards and Anti-Drainage Dripline Systems

Plastic covering sheet systems have recently started to stimulate interest in the orchards market.

Anticipated advantages of plastic covering:

- Weed suppression
- Water saving

Additional advantages researched in recent years:

- Improvement and/or prevention of salinization problems
- Development of widespread shallow root systems
- Temperature control of the soil

When combining anti-drainage driplines and plastic coverings, a problem arose:

In newly planted orchards, where there is no shade, the soil and roots under the sheets are heated by the sun. This problem does not occur in a mature orchard, where the foliage provides shade.

A completely sealed covering with a **small** opening for the new plant traps the heat in the plant area. It is recommended to leave a large opening or hole around the plant.

Small water applications with pulse irrigation result in a flow of hot water to the root zone, in addition to the effect of the covering. The covering is the main cause of the heating.

Planning Instructions

1. The water pipe should be buried and/or protected from the sun.
2. Options for drip laterals:
 - Laterals are buried or covered.
 - Minimum water volume per pulse is calculated so that "cool" water replaces the existing volume and cools the plant area.
3. When using the AgroNaan system, pulses are very short (30 minutes) and water replacement is not possible.

Until a solution is found, it is recommended to install the covering in the second year, after development of the foliage.

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