under partial drought, compared to 45% under complete drought and 12% under no drought (Fig. 3B). Both moisture regimes (P<0.001) and nematodes (P < 0.01) affected channel area with no significant indication of interaction (P > 0.11).

Insect larvae appeared to be relatively inactive under complete drought. In the absence of nematodes, numbers of live insect larvae under complete drought were 39% fewer than under no drought, but the feeding damage was reduced by 60%. In contrast, in the absence of nematodes, numbers of live insect larvae and amount of feeding damage were reduced (as) by only 26% and 18%, respectively, under partial drought compared to no drought. Duncan and El Marsheedy (1996) found that water content in certain fibrous roots was 25%, 67%, and 78% after 23 days of complete, partial, and no drought, respectively. Because soil water potential was similar between the partial drought and complete drought treatments, water content of the root system may have caused the differences observed in the insect feeding behavior in these two treatments.

Adverse soil moisture is a critical consideration for successful establishment of exogenously applied entomopathogenic nematodes that are harmed by rapid desiccation and prolonged exposure to ultraviolet radiation (Downing 1994; Gaugler and Bouche, 1978). *Steinernema riobrave* (that remains near the soil surface following application persists less well than [*] that move more deeply into the soil, either actively or passively in irrigation water (Duncan and McCoy, 1996). However, following application of IFs, normal drying of the surface soil between irrigation cycles may not be detrimental to the survival of these nematodes. Indeed, these experiments suggest that if crop plants have roots to humid deep soil horizons, the roots in the dry shallow soils may provide a mechanism to prolong persistence and efficacy of entomopathogenic nematodes in the soil.

The data from this and a previous study (Duncan and El Marsheedy, 1996) indicate that the behaviors of subterranean herbivores and nematode parasites of plants and insects are fundamentally different in dry soil containing plant roots, depending on whether the complete root system is contained only within dry soil or is apportioned between dry and humid soil. The latter conditions occur commonly in nature where surface soils tend to dry more rapidly due to transpiration and evaporation than do deeper layers of the soil profile. Our findings confirm that the role of plant root systems and hydraulic lift are important factors to consider when studying the fate of rhizosphere organisms in dry soils.

**Literature Cited**


Aseptic cultures: A new approach to control nematodes in vegetable crops.

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Among nematode control methods, chemical and biological approaches have been widely used. However, these methods often have limitations, such as the development of resistance in nematodes or the environmental impact of chemicals. A new approach is needed to effectively control nematodes in vegetable crops.


growth and development of plant roots. Applying nematodes in a controlled manner can provide a sustainable solution. Several studies have shown promising results using this approach.

Methods for the control of nematodes in vegetable crops.

1. Chemical methods: Chemical fumigants, nematicides, and soil amendments are commonly used to control nematodes. However, these methods often have limitations, such as the development of resistance in nematodes or the environmental impact of chemicals.

2. Biological methods: Biological control agents, such as predatory nematodes and fungi, are used to suppress nematode populations. However, the effectiveness of these methods can be limited by environmental factors.

3. Physical methods: Physical barriers, such as plastic mulches and Irrigation systems, can help control nematodes. However, these methods may not be effective in all situations.

4. Integrated approaches: A combination of different control methods is often the most effective approach. This approach allows for the targeted application of multiple methods to provide the best possible control.

5. New approaches: New approaches, such as the use of nematodes in a controlled manner, are needed to provide sustainable solutions.

These new approaches are promising and should be further studied to determine their feasibility and effectiveness in controlling nematodes in vegetable crops.