

The Suitability of Passive Capillary Samplers as a Tool for Monitoring of Nutrient Leaching

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To measure nutrient leaching under field conditions, 2 basics information are essentially needed: 1) the quantity of water percolating through the soil in a specific soil depth and 2) the concentrations of the chemical components (nitrate, phosphate, pesticides, etc.) in the percolate. Of similar interest is the possibility of short-term interval sampling to receive reliable information about the seasonal dynamics of the nutrient flux. Passive CAPillary Samplers, PCAPS suck the pore water from unsaturated soils by using the capillary potential of fiberglass wick, which act as a hanging water column and develops a suction of 0 to 50 cm H₂O when it is wetted. PCAPS have essential advantages compared to the other leaching sampling techniques (soil coring, suction ceramic cups): They collect seepage water from undisturbed soil profiles of a defined area related to water flow dynamics (time and flux proportional) without any artificial suction, vacuum and electricity. Investigation with 56 PCAPS installed in 5 different experimental fields show that water amounts sampled by the PCAPS follows the water balance logically. The water sampling efficiency determined for 2 sites in relation to the climatic water balance is 37 % (arable land) and 76 % (grassland) and is related to precipitation intensity. Collection efficiency has been determined in relation to monolith lysimeter measurements. Pretreatment procedures for fibreglass wicks by which absorption of seepage water components shall be avoided will also be discussed.

Keywords: wick sampler, nutrient leaching, leaching monitoring, PCAPS

The Effect of Plant Arrangement on Yield and Yield Components of Cucumber (*Cucumis sativa*) in Jiroft Greenhouse Conditions

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In order to find out suitable plant arrangement for greenhouse cucumber Varieties a field experiment was conducted in Jiroft Agricultural Reserch center. The experiment was as factorial in Randomized Complet Bolock Design with 3 replications. The first factor was width of plant strip with 15, 30, 45 Cm, The second factor was plant spacing with 25, 40, 55 Cm and the third factor was Varieties naming Royal and Kalifornia. The results showed that the width of 30 Cm produced maximum fruit yield. On the other hand, when plant density was increased, fruit weight, fruit number per plant and single plant fruit yield were decreased significantly. But, number and fruit yield in area significantly increased. The plant density of 25 Cm produced maximum yield in area. Yield between varieties was not significantly different.

Keywords: Greenhouse, cucumber, yield, planting pattern



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ABSTRACT BOOK



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