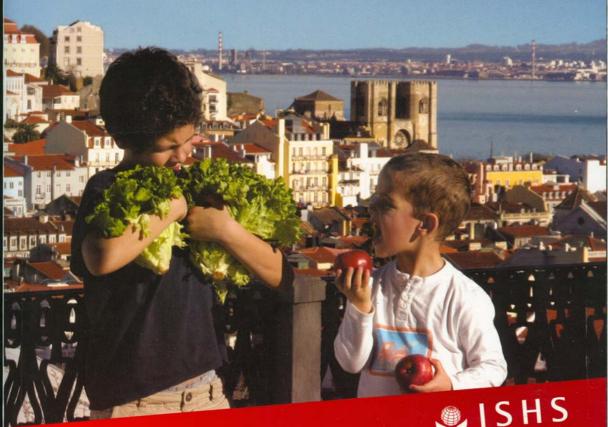


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a Defence Response against

Ribeiro, C.1; Candelas, I.1; Melo, or, A.2

NA PORTIGIA

Gentles, Scot-139 Jano, PORTUGAL

from are considered as the causal agents of il-borne plant pathogens invade and destroy of the trees. Most Phytophthona species secrete erved proteins that are able to enhance plant red resistance manner against infection by was identified in P. cinnamomi (Duclos et (Linnamomin determined (Rodrigues et al., intria the invasion of root cortical tissues by ation in cork and holm oak (Medeira, et of chestnut plantlets grown in vitro were al-10 µg/ml for, two days before being inoculated be effects of parhogen on root colonization. py observations showed that P. cinnamomi if the roots pre-treated with α-cinnamomin. were free of pathogen. On the contrary, the penetrating the phloem and xylem vessels ens of pathogen degradation in the cortical at spaces, and the increase of epidermal and ted with phenol-like compounds strongly In chesmut defence reactions against P. cin-

Disorders of Pistachio It Nematode (Meloidogyne

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DATABATE BEAMIC REPUBLIC OF IRAN

nt of horticultural products in Iran, Numerin the world. Gummosis, verticillium wilt important diseases in the world. Root-knot adoparasitic nematodes that reduced prodorical and biochemical disorders in plants. scies and intensity population nematode. relat region (Razavi Khorasan province -Bolumi, were studied. Meloidogyne javanica lations. The experiments were setup with 50 nt in an imbalanced Completely Randomized the roots were measured. Amount of leaf tree height, east-west spread, north-south neter of annual branch and fruit yield were ncreasing of gall index/egg mass, growth y reduced according to Tukey test. There about leaf necrosis and diameter of annual it yield in Badami cultivar were decreased

506,277

Comparison of Different Methodologies for the Estimation of Chilling Requirements of Five Sweet Cherry (*Prunus avium*) Varieties

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Over the last 40 years, trends toward advances in dates of flowering stages, because of global warming at springtime, have been observed for different fruit tree species. Moreover, the analysis of temperature data has also highlighted clear changes toward warmer temperatures during the endodormancy phase (autumn and early winter) when the buds need chilling effects to break the dormancy phase (chilling requirements). This new situation has led to an increasing concern in many parts of Europe that cropping of perennial fruits may provoke slow of insufficient accumulation of chilling effects. Genetic adaptation of varietal ranges toward lower chilling requirements must become a major breeding objective. Preliminary studies in sweet cherry (Prunus avium) were conducted in order to establish an effective and precise protocol for the quantification of chilling and heat requirements for flowering. This methodology could later be used over large numbers of genotypes, in order to investigate the genetic determinism of chilling and heat requirements. Two different types of forcing tests were compared. The first is based on current growth tests by exposing shoots to controlled warm conditions and by recording data on phenological evolution. The second consists in early growth tests by comparing the weigh of floral primordia in orchard conditions at a given date to the weigh of floral primordia issued from a shoot sample taken at the same date but submitted to warm conditions (Tabuenca's test). Five varieties ('Earlise', 'Garnet', 'Lapins', 'Regina', and 'Summit') were studied during two years at the experimental site of INRA-Toulenne (Southwest France). Out of these, two varieties ('Earlise' and 'Summit') were also studied at a second site, Ctifl-Balandran (Southeast France), during three years. Different models for the estimation of chilling requirements (Weinberger, Bidabé, Utah, dynamic model) were compared. Between-tests, between-years, and between-sites differences were studied and discussed.

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Different Physiological and Metabolic Responses of Pomegranate Genotypes to Freezing Stress

Selahvarzi, Y.; <u>Davarynejad, G. H.</u>; Tehranifar, A.; Nemati, H.; Nezami, A.

Unexpected chilling and freezing is one of the most important problems for pomegranate growers in Iran. For example most pomegranate orchards were completely destroyed in the region because of severe winter freezing in 2008. Therefore a factorial experiment based on completely randomized design (CRD) was performed during 2008. Six genotypes included (Shirin e Poost Ghermez, Poost Sefid, Shahvar, Torsh e Malas, Shalghami and Shishe cap) and 9 temperatures in the range of -10 to -24 °C were compared. The results showed that the amount of browning, proline content, electrolyte leakage and antioxidant activity were increased by freezing incubation, whereas survival percentage was decreased. Not any re-growth was recorded in 3 genotypes (Shirin e Poost Ghermez, Poost Sefid, Shahvar) in -18 °C but Torsh e Malas, Shalghami and Shishe cap genotypes showed 30, 21.5 and 61.2 survival percentages respectively. The cultivar 'Shishe cap' could stabilize its membrane structure and electrolyte leakage to -20 °C. The proline content of 'Shishe cap' showed 12-fold increase at -24 °C in comparison with control. Therefore it seems that 'Shishe cap'cultivar was able to retain its osmotic potential effectively compare with the other cultivars.