

(26°49'07"S 50°59'06"W). Six fruiting structures were characterized: 1- spur (<10 cm) of weak bud (<3,5mm); 2- spur of vigorous bud (> 4,5mm); 3- short twig of terminal growth (<30cm) of weak bud; 4- short twig of terminal growth of vigorous bud; 5- long twig of terminal growth (>30cm) of weak bud; 6- long twig of terminal growth of vigorous bud. Five buds of each structure were analyzed. The sprout index showed significant variation in the three cultivars. In Fuji and Gala the best results were obtained in the long twigs and the worse results in the spurs, and in Daiane there was no significant variation between the structures, except for the spur of weak bud, which showed the worse sprout index. Regarding the fruit set, the best results were obtained in the long twig of vigorous bud and the worse results in the spurs, for all cultivars. The Fuji cultivar showed a high amount of vegetative buds, especially in the spurs, and the Daiane cultivar showed a high sprout index, but not a high fruit production due to the low fruit set. According to this data, the best structure for flower and fruit production is the long twig of vigorous bud, and the worse structure, the spurs, for the three cultivars analyzed.

**Keywords:** apple, fruiting structures, sprout index, fruit set.

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## P-067

### Nitrogen and Potassium Affecting Peach Rust Intensity

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The purpose of this study was to evaluate the nitrogen and potassium fertilization effect on the rust (*Tranzschelia discolor*) severity and incidence on peach (*Prunus persica*) cv Chimarrita. The trial was conducted in a commercial peach orchard, implanted in 1999, at Lapa County – Parana State – Brazil. It was used five nitrogen annual rates (40, 80, 120, 160 and 200 kg ha<sup>-1</sup> of N) and two potassium annual rates (55 and 110 kg ha<sup>-1</sup> of K<sub>2</sub>O), during three years. Nitrogen was applied in three periods (30 % of the annual rate in the sprouting begin, 30 % after thin out and 40 % after harvest), using urea. It was used KCl as potassium source, and applied 60 % in the sprouting begin and the remaining after thin out. It was determined severity and incidence of rust, defoliation and foliar nutritional state on peach trees. There was no interaction between potassium and nitrogen on plant disease. Potassium fertilization did not affect rust severity and incidence, as well as, in the tree defoliation. Increment on nitrogen rate provided diminishing on rust severity on third year trial. It was obtained inverse relationship between foliar nitrogen concentration and rust severity, but there was no relationship between foliar nitrogen and defoliation or rust incidence. The increase of the rust severity promoted increment on tree defoliation. Since, the nitrogen foliar concentration was low, it seems that increment of nitrogen rate can diminish rust severity on peach tree.

**Keywords:** *Prunus persica*, *Tranzschelia discolor*, fertilization.

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## P-068

### Kind of Cutting and Use of Indolebutyric Acid in the Rooting of 'Mirabolano' (*Prunus Cerasifera* Ehrn) Cuttings

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This work was carried out for to verify the influence of types of cuttings and application of indolebutyric acid (IBA) in the rooting of 'mirabolano' cuttings. The cuttings were standardized with a pair of entire leaves and 12 cm in length. The experimental design was completely randomized,

and the treatments arranged in a 3 x 2 factorial comprising: types of cuttings (apical, median and basal) and different concentrations of IBA (0 and 2,000 mg L<sup>-1</sup>). After the cuttings preparation they were immersed in indolebutyric acid (IBA) solution at concentrations: 0 (control treatment) and 2,000 mg L<sup>-1</sup> for 20 seconds. The cuttings were then placed in polystyrene trays containing vermiculite as substrate under intermittent mist chamber. After 90 days, the following variables were evaluated: the rooting percentage, the live cuttings percentage, and the number of sprouts per cuttings. The largest percentages of rooting, alive cuttings and number of sprouts were observed in the median cuttings treated with 2000 mg L<sup>-1</sup> of IBA.

**Keywords:** *Prunus*, rooting, indolebutyric acid, cutting

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## P-069

### Rooting of Cuttings in Three Cultivars of Plum (*Prunus* Spp.)

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This work was carried out for verifying the influence of the type of cuttings and the technique of lesion in cuttings' basis on the rooting of three plum cultivars. The cuttings were standardized with a pair of entire leaves and 12 cm in length. The experimental design was completely randomized, and the treatments arranged in a 2 x 2 x 3, factorial comprising: types of cuttings (median and basal), techniques applied in the cuttings (basis incision and treatment control), and different plum cultivars ('Kelse Paulista', 'Polinizadora da Cati' and 'Grandoure'). The basis incision of the cuttings was performed by making two cuts in their basis. Later the cuttings were immersed in indolebutyric acid (IBA) solution at of 2,000 mg L<sup>-1</sup> concentrations, for 20 seconds. The cuttings were placed in polystyrene trays containing vermiculite as substrate under intermittent mist chamber. After 90 days, the following variables were evaluated: the rooting percentage, the alive cuttings percentage, and the number of sprouts per cuttings. The largest percentages of rooting, alive cuttings and number of sprouts were observed in the median cuttings of 'Kelse Paulista'.

**Keywords:** plum, rooting, cutting

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## P-070

### Boron and Calcium Sprayed on 'Fuyu' Persimmon Tree Prevent Skin Cracks, Groove and Browning of Fruit During Cold Storage

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Flesh softening, skin browning and rotting are major problems during cold storage (CS) of Sweet 'Fuyu' Persimmon. We studied the effects of boron (B) and calcium (Ca) sprayed on the trees during three consecutive years, on the development of skin cracks; grooves and darkening in persimmon fruit under CS. In the municipality of Farroupilha, RS, Brazil (29°31' south, 51°21' west, and about 750 m altitude) a homogeneous orchard area of 0.5 ha was delimited and three sets of five plants for each treatment, were randomly selected and marked. The persimmon trees were sprayed at 20 day interval, from 15th January until harvest, for three consecutive years, with: T1) water; T2) calcium nitrate at 0.5% (m/v); T3) calcium chloride at 0.5% (m/v); T4) boron at 0.3% (m/v). The fruit were harvest with orange-reddish color; 18-20°Brix, flesh firmness of 45 to 60N, and kept under CS at 0±1°C for 45 days. The fruit were evaluated immediately before CS; six hours after removal from CS; and after four days at 23±2°C, from the end of the CS period. Both boron and calcium sprayed