

discs on a suitable medium in petri dishes; and counting the infected discs after 4 days of incubation at 25°C. The percentage of infected discs calculated for each petri dish, which represents a specific zone on the fruit, was used to calculate the average latent infection rate of the whole fruit. The latent infection rate was found to be correlated to the percentage of infected area of the fruits, observed after harvest.

The assessment of latent infection rate during growth and development of the fruit, may help to improve the decay control program in the orchard. It also enables a forecast of the expected post-harvest decay rate even before picking. (L)

THE INFLUENCE OF DISINFECTION OF WARE POTATOES ON THEIR KEEPING QUALITY

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In the last few years many of the ware potatoes grown in Israel have been stored in bulk immediately after harvest, without prior sorting and grading, which may result in an increased incidence of decay during prolonged storage.

Laboratory and semi-commercial tests were carried out to evaluate the effectiveness of various thiabendazole (TBZ) treatments in controlling decay during storage. Dipping uninjured and artificially injured tubers (cv. 'Up-to-Date') in suspensions of 1000 to 2000 ppm of TBZ reduced the incidence of *Fusarium* rots in the laboratory. The shorter the lag between the injury and the treatment, the greater the effectiveness of the treatment. Semi-commercial tests showed that spraying the tubers with a suspension of TBZ only partially reduced the occurrence of rots during a period of 100 days, the effectiveness being related to the concentration of the compound. This limited effectiveness can be explained by the fact that while most of the *Fusarium* rots were prevented, a substantial number of tubers decayed due to an *Alternaria* infection. Also, excessive moisture on the treated tubers may have increased the occurrence of bacterial rots.

The TBZ residues found on the treated tubers did not exceed the tolerance levels acceptable in Europe and the U.S.A. (5-10 ppm), and most of the TBZ was found on the tubers only. (L)

PHYSIOLOGY, EPIDEMIOLOGY AND CONTROL OF *PSEUDOMONAS TOMATO*, CAUSAL AGENT OF BACTERIAL SPECK OF TOMATO

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Bacterial speck of tomato has become widespread in Israel in the last few years. The possibility of disease spread by infested seed was investigated in this work. Bacterial speck developed in plants grown under greenhouse conditions from seeds inoculated with *P. tomato* in sterilized soil and from plants grown from surface-sterilized seeds in inoculated soil. The amount of initial inoculum (10^1 - 10^2 bacteria/g soil or seed) was enough to incite disease symptoms. The pathogen survived and retained its infection capacity on the seed surface, in soil, and in the rhizosphere of tomato and non-host plants.

All bacteria adsorbed to the seed were killed by heating at 48°C for one hour, without affecting germination.

The disease symptoms are very common in the field, especially during winter and early spring in crops grown under plastic cover. In our studies, when the plastic cover was removed the disease developed only following rain or irrigation, whereas in dry periods all the new foliage was symptom-free. Weekly spraying of the plants with 5 g/l of copper compounds [$\text{Cu}(\text{OH})_2$] at all stages of growth or after periods of high humidity, significantly reduced disease severity but still could not prevent the development of some disease symptoms.

Pseudomonas tomato causes mainly necrotic spots in tomato leaves. In a growth medium, *P. tomato* excreted a substance (possibly a toxin) which caused similar necrotic symptoms. The properties of this substance and factors affecting its production are being investigated. (L)

BOTRYTIS DISEASE IN ONIONS GROWN FOR SEED PRODUCTION

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The common procedure of growing onion for seeds in Israel is by planting onion bulbs. Infected bulbs were found to be the major source of transferring *Botrytis* disease from season to season from the nursery to the farmer's fields. Studying the life cycle of the pathogen, it was found that the fungus could be carried also by seeds. Penetration of *Botrytis allii* into the onion bulbs occurs in the nursery. The fungus in its latent form is carried inside the bulb and develops only in the second growing season, causing damage to the growing plant and secondary infections to surrounding plants.

Three sprays with the fungicides Ronilan (vinclozolin) or Rovral [3-(3,5-dichlorophenyl)-1-isopropylcarbamoylhydantoin] at four-week intervals were found to reduce infection from 24% in the untreated plots to 8% in treated plots. The percent of infected bulbs was determined by using a staining method developed by us. Results were found to be in good correlation with the amount of infected bulbs found in the field after planting. Chemical treatments reduced disease incidence in the field, increased the number of inflorescences, and raised the seed yield by 45 - 50% in comparison with the control, in both unirrigated and irrigated fields.

The same pathogen may also cause damage to the seed stalks and open inflorescences. However, the penetration of the fungus could be observed from the beginning of inflorescence development in March. Preliminary experiments showed that treatments with Ronilan + Ridomil (CGA 48988) reduced damage to the inflorescences from 8% in the standard treatment (Manebgan [maneb] alone) to 3% in the treated plots. (L)

IMAZALIL (FUNGAFLO 20%) FOR THE CONTROL OF POWDERY MILDEWS

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Imazalil is a systemic fungicide which effectively controls a wide spectrum of fungi. The 20% EC formulation (Fungaflor) is used for the control of powdery mildews in vegetable and of *Alternaria* disease in various crops.

Two trials were performed in cucumbers, cv. 'Delilah'. Both trials were laid out in randomized blocks, replicated four times, and sprayed by means of a motorized knapsack sprayer at a volume of 500 l/ha. The sprayings were begun when the disease symptoms first appeared. The disease evaluations were made on 40 leaves from each treatment on a scale of 0-5, where 0 = no disease symptoms and 5 = leaves completely covered with the disease.

In the first trial, with seven applications at intervals of 5-9 days, the control plants had an average rating per leaf of 4.7, while the plants treated with Imazalil at 100 g a.i./ha were rated at 0.2. In the second trial, with five spray applications at intervals of 4-8 days, the control plants were rated at 4.2, while the plants treated with Imazalil at 100 and 200 g a.i./ha were rated at 2 and 2.0, respectively. It therefore appears that Imazalil 20% EC is effective in controlling powdery mildew in cucumbers. (L)