Observations on 'Magness', 'Moonglow', and 'Dawn' Pears in Indiana

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Three pear cultivars were released by the U. S. Department of Agriculture in 1960 (2):

'Magness' (US 3866E = Giant Seckel x Comice)

'Moonglow' (US 353 = Michigan 437 x King Karl)

'Dawn' (US 570 = Michigan 437 x Comice)

Magness and Moonglow were introduced as resistant, and Dawn as susceptible to the fire blight disease caused by *Erwinia amylovora* (Burr.) Winsl.

Fire Blight Evaluation: Results of inoculation of nursery trees from two separate trials, one run 1958 to 1960 and the other 1969 to 1970 are shown on Table 1. Resistance, expressed as the length of blight penetration per tree, suggested a ranking of these cultivars as follows: Moonglow (highest resistance), Magness, Dawn (least resistance). All selections were more resistant than Bartlett, with Moonglow and Magness showing resistance near the level of Kieffer.

Subsequent levels of natural infections on unsprayed trees in the field have been followed since 1955 for Magness, 1959 for Dawn, and 1960 for Moonglow. Magness has shown a very high level of field resistance. Trees planted in 1955 are practically free of fire blight every year. Under the USDA classification system (3), where 1 = dead and 10 = no infection, Magness generally rates as 9 or 10. Moonglow grown from 1960 to 1970 as a single tree topworked on an Old Home scaffold showed good resistance with blight level classified only as low as 8 for one year. In contrast, resistance rating of Dawn has been variable. Out of 6 trees originally planted in 1959 and 1960, two have died from fireblight in their fifth and sixth year. However, the remaining 4 trees survived, although fire blight ratings for 2 trees have been as low as 4 and 5 in some years. Under similar conditions, Bartlett trees have all died from fire blight.

Table 1. Fire blight rating of inoculated pear grafts in the nursery, Lafayette, Ind.

Cultivar	Mean blight penetration (inches) 1958-1960	1969-1970
Old Home	0.7	—[z]
Kieffer	17.6	16.5
Moonglow	17.8	6.6
Magness	19.9	17.4
Dawn	26.0	—[z]
Bartlett	58.6	56.6

[z]Not included in trial.

Performance and Dessert Quality: Magness is a very shy bearer at Lafayette. In many years, yields are too small to warrant commercial harvest. Fruit size tends to be small even when crop load is light. Although fruits are of excellent quality with very rich flavor and extremely smooth texture, Magness appears to be of questionable commercial value because of low yield.

Moonglow is very productive with very large, fairly attractive fruit. However astringent skin makes this cultivar unacceptable as a fresh market pear.

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Dawn is a shy bearer but has been more productive than Magness at Indiana. The large, pyriform fruits mature in late August and are of very good quality—superior to Moonglow, although possibly not as rich or as smooth as Magness. Fruits are practically seedless.

Dawn appears to have commercial possibilities in the Midwest if productivity can be increased. Although its blight resistance is not as high as that of Moonglow or Magness, our results indicate that Dawn may have sufficient resistance to be maintained in the Midwest with proper control measures. In a large scale evaluation trial under natural infection at Beltsville, Maryland, it ranked very high with regard to resistance (1). Crosses involving Dawn pollen have produced good set, indicating it to be a satisfactory pollinator.

Literature Cited

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Proper Timing Is Vital to Peach Thinning

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The high cost of hand thinning and the availability of chemical thinners on the market have created much interest among Florida peach growers. However, the change from hand thinning to chemical thinning has not occurred because results have been inconsistent.

The success of auxin-type compounds depends on the proper timing of application with cytokinesis, a developmental stage of the endosperm tissue within the seed. Chemical thinning at this stage is usually 4 to 6 weeks after bloom, when the main frost danger has passed and fruit set has been evaluated.

Cytokinesis has been related to seed length and in many peach varieties it occurs at a seed length of 7-9 millimeters. However, the rate of development is not the same for all varieties, thus the seed length when cytokinesis occurs must be determined for each variety. Failure to make this determination has been one reason for the inconsistent results.

Seed length for eight peach and nectarine varieties grown in Florida has been correlated with the period when ⅔ of the fruit had endosperm in cytokinesis (Table 1). Since the auxin-type compounds are effective during cytogenesis ⅓ of the fruit should have endosperms that have completed cytogenesis to be resistant to removal, in order to insure that the total crop will not be removed. Seven of the varities shown in Table 1 normally ripen their fruit from 60 to 100 days after bloom. The seed length of these short-cycle peaches (11.4 to 13.6 mm) is longer at the best thinning stage than the commonly accepted length (7-10 mm) for most varieties successfully thinned. 'Early Amber'

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