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Impact of Disease Resistant Apple Cultivars on Fungicide Use in Ohio

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The impact of disease resistant apple cultivars and inorganic fungicides (copper and sulfur) on current fungicide usage patterns are being studied. The efficacy of "organic" and conventional fungicide spray programs was evaluated on an apple scab immune ('Liberty') and a scab susceptible ('McIntosh') apple cultivar in a randomized, replicated trial at Wooster, Ohio. Trees of both cultivars were nontreated, treated with inorganic "organic" fungicides only, or treated with conventional fungicides. 'McIntosh' trees received full season fungicide applications and 'Liberty' trees were sprayed only during the summer cover sprays (after petal fall) for control of summer diseases only. Emphasis was placed on evaluating the efficacy of disease resistance for full season disease control alone and in combination with various fungicide programs. Diseases of primary interest were apple scab, sooty blotch, fly speck and black rot. In 1991, the number of fungicide applications ranged from 0 for nontreated 'Liberty' to 12 for the full schedule "organic" treatment on 'McIntosh,' with both treatments providing excellent disease control. All nontreated 'McIntosh' fruit were scab infected and of very poor quality. Due to a dry growing season and lack of summer disease development, nontreated 'Liberty' fruit had excellent quality. In 1992, the number of fungicide applications ranged from 0 for nontreated 'Liberty' to 14 for the full schedule "organic" treatment, with both treatments providing good to excellent disease control. An economic analysis of the programs is currently being conducted.

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A Maturity and Storage Study of Scab-Resistant Cultivars

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Based on the starch-iodine test and internal ethylene concentrations measured during three harvest seasons (1991-1992), the maturity of scab-resistant cultivars grown in the Annapolis Valley, Nova Scotia, can be ranked as follows (earliest to latest): 'Redfree,' 'Prima,' 'Novamac,' 'Macfree,' 'Moira,' 'Priscilla 'Nova Easygro,' 'Liberty,' 'Sir Prize,' 'Novaspy,' and 'Trent.' Several cultivars, 'Novaspy,' 'Moira,' 'Priscilla,' 'Novamac,' 'Nova Easygro,' 'Prima,' and 'Macfree,' were studied for two years (1990 & 1991), and three cultivars were studied for one year, 'Sir Prize' (1991), 'Liberty' (1991), and 'Trent' (1990). In 1990 each cultivar was stored for 3 and 6 months at 3°C in air and

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