Conclusion

Evaluation of the program included pre- and post-tests that were developed for each subject area. These were administered to the participants at the beginning and end of the program. With the data obtained, plus observation by agents and anecdotal information received from the farmer participants, it was concluded that appropriate development of educational materials of a nonperson-to-person nature will be a valid means for educational program delivery by extension in future educational programming for small and part-time farmers. Altogether, one of the greatest indicators of the acceptance of the modular educational format for program delivery was that more than one-half of the farmers indicated a willingness to pay for these types of materials in the future.

Appropriate packaging of information into learning modules and summarily making them available to this audience for their self-study appears to be a highly desirable mode of program delivery for the farmers and extension personnel. This means of program delivery was found to be much more efficient and successful in educating these audiences than expending considerable time and other resources through person-to-person methods in which specific technology is transferred, but few long-term educational results are achieved.

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Note

High- and Low-performing Crabapples during Abnormally Severe Apple Scab Conditions

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Crabapple scab was extremely severe in northern Illinois during 1995. Almost 1000 calls concerning apple scab were received at The Morton Arboretum Plant Clinic during June and July. Abnormally high spring precipitation of 5.3 and 5.6 inches in April and May, respectively (30% and 36% higher than normal), undoubtedly caused the severe and prolonged scab outbreak, and the situation provided an opportunity to evaluate crabapples under extremely high disease pressure. Extreme wetness in April and May is very rare in northern Illinois, but an extremely wet April or May has occurred every 1 to 9 years from 1895 to 1983 (data from NOAA). Excessive spring wetness results in severe apple scab because repeated infection periods occur during budbreak and leaf emergence. The scab susceptibility ratings should not be considered overall performance ratings for crabapples under typical northern Illinois conditions.

We evaluated 102 *Malus* species and cultivars for scab symptoms in July and September and for vigor and recovery in September. Tree age ranged from 6 to 73 years, the median age being 14. With a few exceptions, three or more trees were evaluated per taxon. Disease severity was rated from 0 to 5 (T. Green, Western Illinois Univ.) and by estimating the percentage of tree canopy showing symptoms. Recovery and vigor ratings assessed new leaf growth and scab incidence using a modified version of Green's scale.

Many taxa performed well in 1995, but the following taxa stood out because they were free of scab in July and September and exhibited excellent vigor: 'Adirondack', *Malus baccata* f. *jackii*, 'Beverly', *Malus halliana* var. *spontanea*, 'Jewelcole', 'Mary Potter', 'Midwest', 'Molazam', 'Prairie Maid', 'Prairifire', 'Purple Prince', 'Silver Moon', *Malus tchonoskii*, 'Tom's Pink', 'White Angel', *Malus xzumi* 'Bob White', 'Zumi Wooster'.

The following taxa were ranked most susceptible because of extremely high scab and defoliation levels in July and September: *Malus xadstringens* 'Hopa', *Malus xadstringens* 'Radiant', *Malus baccata* var. *mandshurica*, 'Centzam', *Malus coronaria* var. *dasycaelyx*, *Malus glabrata*, *Malus kirghisorum*, 'Indian Magic', 'Indian Summer', *Malus xpurpurea*, 'Red Barron', 'Red Jade', 'Robinson', *Malus spectabilis* 'Riversii', 'Velvetcole'.

Of the crabapples in the most resistant group on which information is published, all are considered highly resistant to scab [*Malus*, vol. 9(2), 1995]. Several of the crabapples in the most susceptible group also have been reported to be resistant to highly resistant to scab, albeit some are known to be susceptible in some years [Mort. Arb. Pl. Info. Bul. no. 30-31 (1986)] and in wetter climates (T. Green, personal communication). The fact that certain taxa reported to be resistant to scab overall were found to be highly susceptible during 1995 underscores the important mediating effect of environmental conditions on the susceptibility of these taxa. The results may be helpful for identifying taxa that are consistently resistant to scab. In addition, the ratings may be helpful when considering cultivars and species for which little information is published.

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Data on all taxa are available from K.A. Jacobs.