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Growing and processing the Wayne apple

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Wayne, Geneva selection NY 44420-1 (Northwestern Greening x Red Spy), was introduced in 1962 to help fill the need for a better McIntosh season processing apple (4). It was chosen to replace and supplement other early but lower quality culti-vars for early processing.

Although several years of commercial experience have revealed some substantial problems in growing Wayne, it nevertheless has outstanding potential when properly managed in the orchard and handled for processing. Wayne cannot succeed if treated as a Greening or Baldwin. It requires the use of some special cultural techniques, as do most standard sorts. Wayne is in season with Mclntosh and may show the same sensitivity to tardy harvest or improper storage conditions. This publication documents the exceptional processing qualities of Wayne and suggests a production system for Wayne that has shown promise at the New York State Agricultural Experiment Station.

WAYNE'S RAPID RISE TO PROMINENCE

From 1963-1965, some 40,000 Wayne trees were planted largely at the urging of processors (2). This unprecedented deluge of trees constituted 10 per cent of all new plantings in western New York. Such a large number of trees seemed necessary in order that the processor might have adequate volume for his production line. For the grower, however, this heavy planting provided no "lead time" for identifying the problems that are always associated with any new cultivar. In the past, a new cultivar was planted on a small scale and observed for at least 10 to 20 or more years before large-scale planting.

For example, our most important variety, Mclntosh, discovered in 1796 caught on very slowly and was not introduced commercially until 1870. As late as 1905, Beach et al. (1) wrote of Mclntosh: "It is susceptible to scab.... The crop ripens unevenly, and a considerable portion of the fruit is liable to drop before it is ready to pick.... In some localities the tree is...not satisfactorily productive.... It...is a reliable cropper yielding good crops biennially and sometimes annually. It has not been sufficiently tested to demonstrate fully its value for commercial purposes...." The case of Mclntosh demonstrates that a new cultivar having exceptional quality can succeed despite its faults when appropriate production systems are developed and put into practice. Such systems have not yet completely evolved for Wayne.

PROBLEMS AND RECOMMENDED SOLUTIONS

At the time a new apple cultivar is introduced, the nature of its performance under all circumstances cannot possibly be known. The 1962 publication (4) introducing Wayne, Niagara, and Spigold included the statement, "While it is hoped that all three of these new varieties will eventually become commercially important, growers would do well to remember that the planting of any new variety involves an element of risk. Until more orchard evidence is available, only limited commercial trial plantings are recommended."

Wayne, indeed, has its own individual characteristics to which growers must become accustomed. Several of these have been accentuated by growers'

failure to put into practice their commonsense horticulture. Application of present research plus growers' attention to these problems should eventually lead to appropriate cultural systems. Following are discussed the most significant problems encountered in growing and processing Wayne, along with recommendations designed to alleviate or eliminate these problems. These recommendations are brought together near the end of this bulletin as "Components of a Systems Approach."

Late Bearing.—Young trees of Wayne commence flower bud formation at a later age than those of McIntosh, Golden Delicious, Idared, and other precocious cultivars. At Geneva, Wayne and four other varieties are being grown on the dwarfing rootstock M.9 by the "slender spindle" system developed by the Dutch (Fig. 1). Yields obtained during the third growing season indicate that Wayne is more precocious than its parent, Northern Spy (Table 1).

This inherent late-bearing tendency is accentuated by the shading caused by the upright growth habit of Wayne (Fig. 2) and also by the excessively heavy fertilizer and pruning programs carried out by some growers.

Recommended Solutions: (a) When a precocity-inducing stock is used, such as M.7 or MM.106, production begins at age 5 or 6 (Table 2); M.9 causes earlier production (Table 1). (b) Heinicke (3) has shown that the upright growth and profusion of scaffolds can be prevented by early spreading of branches and appropriate training during the formative years. Even on the 4-, 5-, and 6-year-old trees now in commercial orchards, spreading at this time will materially decrease the leggy shoot growth and encourage flower bud formation, (c) Applications of nitrogen fertilizer should be minimal on Wayne until bearing is well established.

Table 1.—Production of "slender spindles" on M.9 during the third growing season at Geneva, N. Y. Orchard density 544 trees per acre.

Cultivar	No. trees	Av. yield	
		Pounds per tree	Bushels per acre
Lodi	25	9.9	135
McIntosh	24	8.9	121
Rhode Island Greening	23	8.2	112
Wayne	54	5.8	79
Northern Spy	24	2.1	29

Prolonged Leaf Retention.—Wayne holds its leaves unusually late in the fall. This characteristic is accentuated on the late-maturing stock, MM. 106. In late October 1968, a freezing mixture of snow and rain coupled with gusting winds toppled hundreds of Wayne/M.7 trees which exemplified the disadvantage of prolonged leaf retention.

Recommended Solutions: (a) On bearing trees, application of nitrogen fertilizer should be completed well before bloom, since later application may result

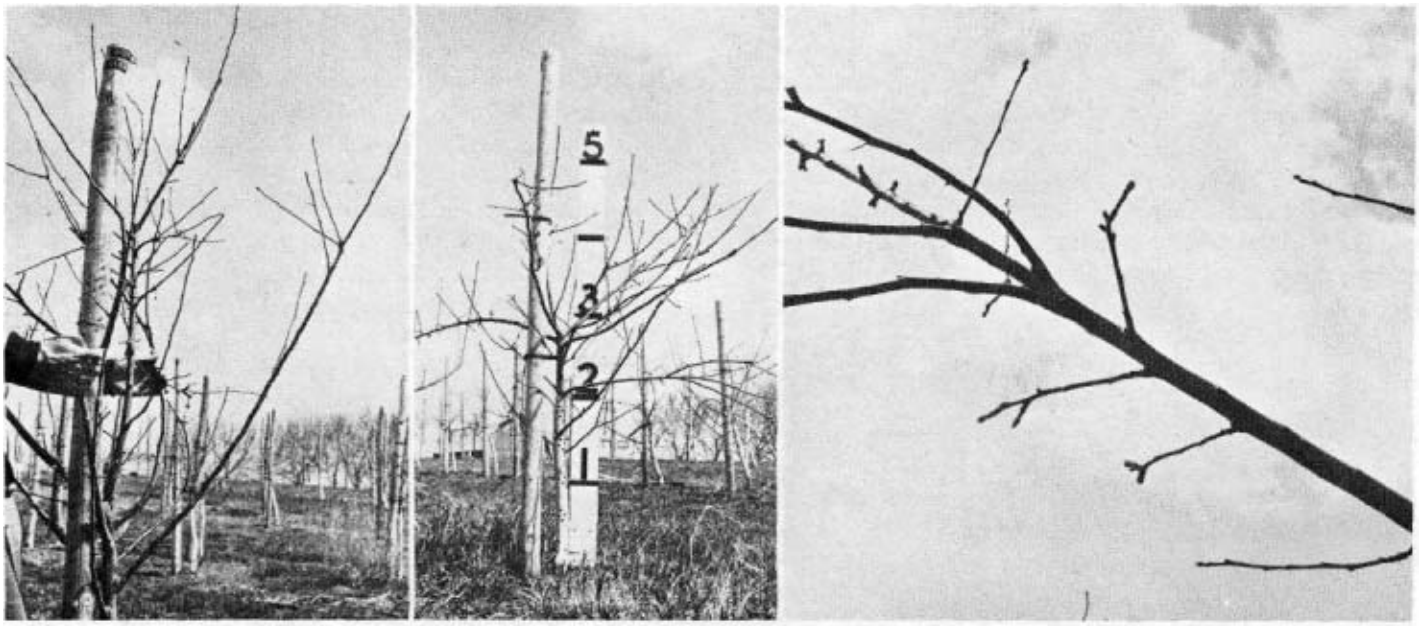

Figure 1.—Three-year-old Wayne/M.9 "slender spindles." (a) Pruned and spread in the first summer, spread in the first winter, but not spread in the second winter. Branches tend to resume vertical inclination when not spread; few to no spurs form on these relatively upright shoots. (b) Pruned and spread in the first summer; topped and spread in the first and second winters; fruit buds developed. (c) Fruit buds developed on unpruned branch spread about 65° in the second winter.

Figure 2.—Interior of an 8-year-old Wayne/seedling tree, completely devoid of fruiting spurs. Note the heavy pruning cuts used to open the tree to light.

in prolongation of nitrogen effects. (b) Unless located on very favorable sites, Wayne on M.7, M.26, or M.9 should be permanently staked. (c) Early development of a spreading scaffold system and its attendant lower center of gravity will considerably reduce the leverage on the root system. Spreading on older, untrained trees will also be of some help.

Narrow crotches and Upright Growth—The main branches of Wayne are very upright. Heavy cropping in later years does not open up the tree because by that time the main branches are too heavy and too stiff to bend. In addition, when a Wayne tree is planted and the whip cut off, from four to eight buds below the cut develop into a tight "bird's nest" of branches.

Recommended Solutions: (a) Summer pruning during the month following planting would eliminate the "bird's nest" problem. Rubbing off unwanted shoots can be done very rapidly during early June. This practice is also helpful on cultivars such as Idared, Jonagold, and Empire, which normally develop good crotch angles, but on Wayne, Spy, and others with similar growth habit the practice is most imperative, (b) No cultivar needs spreaders more than Wayne (Fig. 3). Spring-type clothes pins, wire forms, styro-foam blocks, toothpicks, or other such devices should be applied during the first summer (Fig. 4). This practice will insure initial establishment of good crotch angles on selected scaffolds. A few minutes devoted to this operation during the tree's first year will save many hours of pruning time in later years.

Figure 3.—Five-year-old Wayne/MM.106. (a) No training in first 2 years in orchard; hedge pruned with mower in third and fourth winters. (b) "Bird's nest" of branches developed because first hedge pruning was not followed by summer pruning. (c) Interior of tree completely devoid of fruiting potential because it was not spread open.

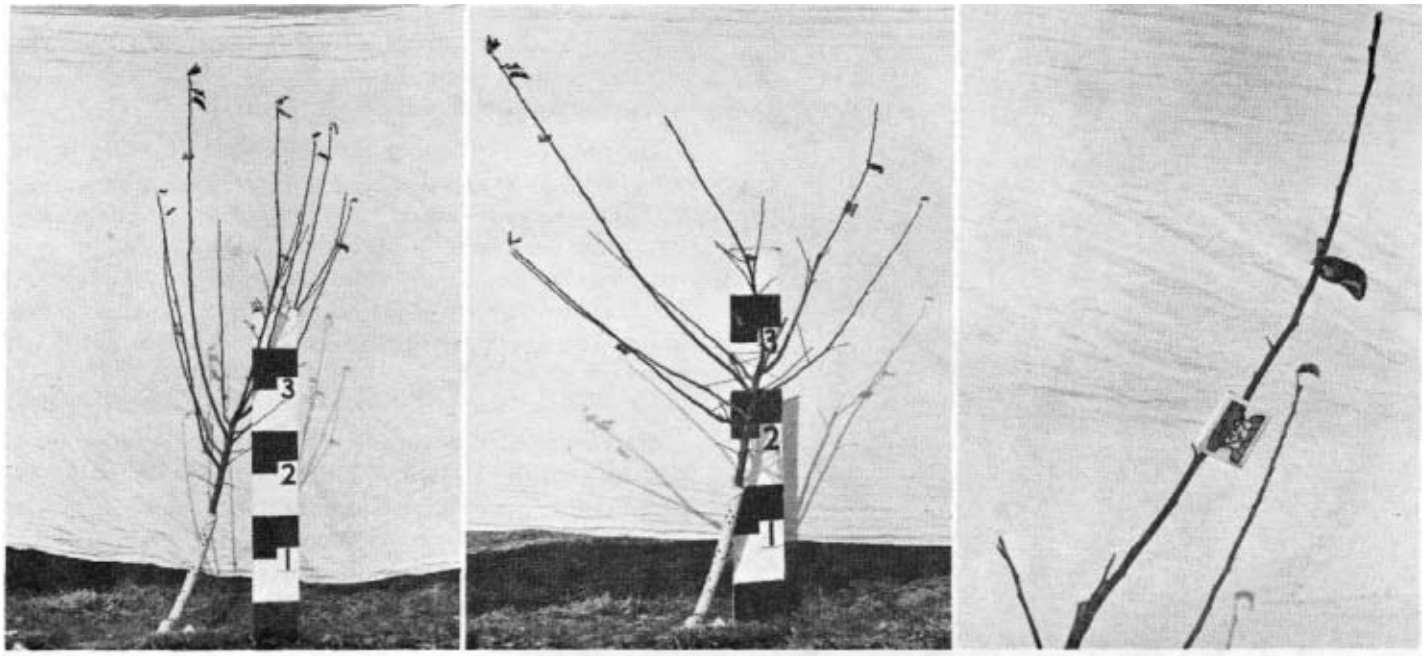

Figure 4.—Wayne/M.9 trees after two growing seasons. The upright shoot growth and narrow crotch angles are typical of this cultivar. Only two flower buds were formed on this tree, even though the rootstock strongly induces precocity. After the insertion of six wire spreaders, the limbs were in positions that lead to flower bud formation. To reduce growth, the leader was cut back to the topmost lateral which was also tipped causing development of side branches.

Table 2.—Induction of early bearing of Wayne apple trees by clonal rootstocks. Cohn Farm, Sodus, New York.

Rootstock	No. trees	1968 Yield per tree (bu)	1969 Yield per tree (bu)	Av. cumulative yield per tree 5th yr. (bu)
MM.106	38	.39	1.01	1.40
M.2	27	.34	1.01	1.35
M.9/M.2	45	.17	.99	1.17
M.7	19	.26	.88	1.14
M.9	130	.22	.81	1.03
MM.111	20	.02	.58	.65
MM.102	16	.12	.32	.44
MM.109	17	.02	.30	.32
M.13	12	0	.10	.10
Seedling	10	.02	.08	.10
MM.104	7	.03	.03	.06

(c) Spreaders should be used, preferably of the type described by Heinicke (3). Beginning after the second growing season, the angle of a scaffold should be brought down to about 45° (Fig. 4). After the third season, spreaders should be used against the leader to increase the angle of the scaffolds even more (Fig. 5). It is essential that this be finished no later than petal fall if set of fruit buds is to be stimulated.

Pollination requirements—Wayne blossoms are self-unfruitful, as are those of almost all other apple cultivars, so cross-pollination is essential. Wayne blooms very late, along with Rome, Golden Delicious, and Spy. In most seasons, there is enough overlap with midseason bloomers, such as Delicious, Cort-land, and Empire, to give Wayne a good fruit set. However, vagaries of the weather can lead to enough spread between late and early bloomers to prevent adequate cross-pollination.

Recommended Solutions: (a) Plant Wayne with Rome, Golden Delicious, or Northern Spy as pollinators. These and Wayne are diploids producing good viable pollen and are cross-fruitful, so only two cultivars are required. One sensible arrangement is to

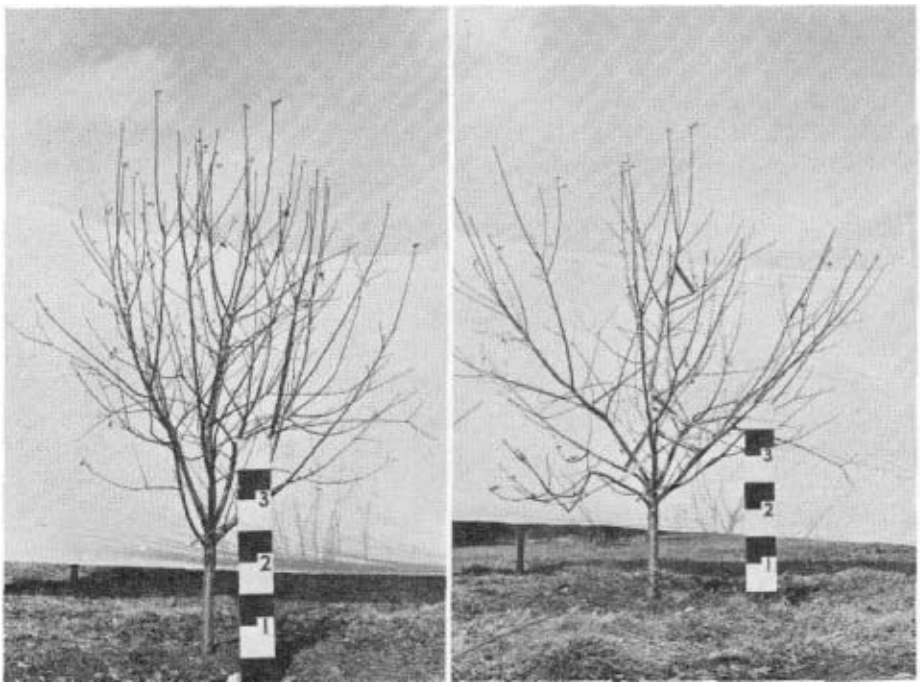

Figure 5.—Wayne/MM.106 after five seasons in the orchard. This tree carried nine apples during its fifth season, and many of the terminals are now flower buds. However, there is almost no spur development in the interior of the tree. Bending and twisting of the limbs preceded insertion of 12- and 18-inch Heinicke spreaders. Opening the tree in this way will permit spur formation in the interior. No pruning was necessary.

have a pollinator every third tree in every third row. Planting two rows of Wayne alternating with two rows of a pollinator, however, is a better arrangement for mechanical harvesting, (b) Dandelion blossoming coincides with the blossoming of Wayne, and bees prefer dandelions to apple blossoms. Kill the dandelions with an appropriate herbicide, most effectively applied in the fall, or mow the orchard the day before Wayne blossoms open, (c) Distribute one hive of bees per acre, having them in place just before Wayne flowering begins.

Excessive vigor— Wayne trees are strong growers, even after they come into bearing. On bearing trees, too much fertilizer results in excessive shoot and leaf growth which causes shading and reduced flower bud formation. Under these circumstances, heavy fertilizer programs may actually reduce production.

Recommended Solutions: (a) Use size-limiting stocks. M.9 and M.9/M.2 interstem trees have had especially good stature, even without appropriate training, (b) During the early years, fertilize to get 18 to 24 inches of growth per year on most long shoots. Stop nitrogen fertilizer the year before first fruiting is expected. Leaf analysis service should be used, (c) Alar applied in June with a hand gun to the top of the canopy will effectively reduce shoot extension. This application should be delayed until fruit thinning effects are improbable, (d) The training and spreading practices suggested above will help to reduce the excessive vigor, (e) The bearing of a crop of fruit is a most effective and desirable agent for reducing vigor.

Fire Blight—Wayne's susceptibility to fire blight is similar to that of Monroe, much greater than that of McIntosh, but less than that of Niagara and Idared. Most blight infections on Wayne are through blossoms. Infections initiated in blossoms often remain quiescent until the two shoots of the cluster base have grown to lengths of 10 to 25 inches; subsequent blight development at the original infection point results in girdling and death of one or both of these new shoots. The extent of fire blight damage on Wayne trees in 1972 compared with other cultivars is shown in Tables 3 and 4.

Recommended Solutions: Prolonged active growth through the summer increases the extent of blight infection. This can be reduced by using no late spring fertilizer applications, by limiting herbicide coverage, and by avoiding growth-inducing rootstocks. Control of sucking insects can reduce infection. Early blooming susceptible varieties, such as Niagara, should not be planted in the same block, since inoculation of Wayne from blossom infections in the early varieties is almost certain. When weather conditions preceding and during bloom favor fire blight infection, streptomycin or other recommended spray programs should be followed. Sanitation by pruning newly blighted twigs and by treatment of canker may also be helpful.

Yields— Some growers have complained about poor fruit yields of Wayne, especially of young trees. In field trials, Wayne has yielded well, though less so than Cortland or Mclntosh. The Geneva Station has hundreds of Wayne trees in its various research projects, but the three trees on seedling represented in Figure 6 have the longest recorded production history. From the 9th to the 17th years, yields were remarkably constant and adequate. Increased tree size and age usually result in steady increases in yields,

Table 3.—Fire blight infection of 6-year-old fruiting trees of Wayne, Monroe, and McIntosh during the 1971 epiphytotic. Comparison of infection levels in Trickler orchard at Geneva, N. Y. Planting included three replicates, 7 to 14 trees per plot.

	Wayne	Monroe	McIntosh
Trees blighted %	22.8[a*]	27.7[a]	8.6[b]
No. of infection points per tree (all trees)	1.2[a]	1.7[a]	.2[b]
No. of infection points per tree (infected trees only)	5.2[a]	6.2[a]	2.7[b]
Degree of infection at each infection point (scale 1= limited to new growth, 2= limited to new and 1-year-old wood, etc.)	2.0	1.7	1.5

* On a given line, figures followed by unlike letters have a difference which is statistically significant.

Table 4.—Fire blight infections in Wayne and other cultivars during the 1972 epiphytotic at Geneva, N. Y., Orchard 25.

		Number of infections per tree terminating in			
Cultivar	Rootstock	Fruiting spur	1971 Growth	1970 Growth	Composite blight index[a]
Wayne	M.7	6.2	17.2	2.8	49.0
Monroe	M.7	1.8	3.0	.1	8.3
Mutsu	M.7	5.3	3.3	.7	14.0
Empire	M.7	0	0	0	0
Red Delicious	M.7	0	0	0	0
McIntosh	M.7	0	.4	.1	1.1
Wayne	MM.106	1.7	11.5	3.4	35.0
Monroe	MM.106	3.5	8.2	.9	23.6
McIntosh	MM.106	0	.6	.1	1.6

a/ Composite blight index = Average number of infection points per tree multiplied by average age of penetration of lesions.

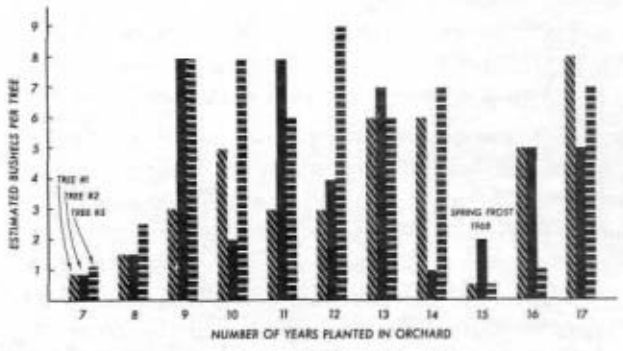

Figure 6.—Annual yields of three individual Wayne trees on seedling roots.

but this did not occur with the three trees in Figure 6. A dearth of fruiting surface in the interiors of Wayne trees have been the major cause.

Wayne fruits are borne on spurs on 2- and 3-year-old wood and terminally on 1-year-old wood. Like other terminal bearers, Wayne is an annual cropper. This annual cropping is illustrated by the lack of any biennial tendency in the three individual trees in Figure 6.

Recommended Solutions: (a) Inadequate pollination has been a major cause for poor yields. Appropriate pollinations should be provided, (b) Early training and spreading leads to a productive tree surface. Even on older trees, spreading will enhance the production performance, (c) Use of precocity-inducing root-

stocks, such as MM.106, M.7, M.9, and M.9 inter-stems, will improve yields, as compared to MM.lll, seedling, and other relatively vigorous stocks (Table 2). (d) During the middle years, pruning should be aimed at improving light distribution within the tree. This is particularly critical as the canopy begins to form a dense shade.

Harvest Date—Wayne was introduced as a cultivar to follow immediately after McIntosh in harvest. However, the use of Alar has retarded the harvest of Mclntosh. For processing, it now appears that Wayne can most appropriately be picked before Alar-treated Mclntosh trees.

A source of difficulty is that Wayne fruits hang well on the tree after full maturity is reached. Many growers operating on a crisis picking schedule have let Waynes hang on the tree until overripe. These fruits may crack at the stem end, as do overripe Nothern Spy fruits. Cracking, however, is a problem only if harvest is long delayed. Processors are likely to reject such overripe fruit.

Recommended Solutions: Appropriate scheduling of harvest operations is essential for all cultivars. A grower may find it best to treat all his Mclntosh trees with Alar and harvest his Wayne early for the processor.

When harvested at optimum maturity at the end of September and stored promptly, the cold storage life of Wayne fruits for fresh market is usually about 110 days, or about the same as Mclntosh.

EVALUATION OF PROCESSING QUALITY

In 10 years' processing tests, canned and frozen slices made from Wayne have consistently been of the finest quality. From the processors' point of view, Wayne provides an outstanding cultivar for the 2- to 3-week period before Rhode Island Greening. Although Northern Spy has long been considered the standard of excellence for eating out of hand or in pastries, Wayne produces sauce and slices of at least equal quality. In fact, the processor could consider it as an early Spy.

In our processing tests at Geneva, the average harvest date for Wayne has been September 29. Fruit was processed after about 5 weeks in cold storage at an average pressure test of 15.5 pounds. A taste panel (Fig. 7) evaluated applesauce, canned slices, and frozen slices made from Wayne and several dozen other cultivars, both old and new. While being evaluated, cultivars were identified only by code numbers.

Wayne products almost invariably ranked high, probably the highest of any cultivar included in the decade of testing. On a scale of 1 to 10, Wayne averaged 7.8 (Table 5) when scored for color, flavor, and texture. By comparison, Rhode Island Greening averaged 6.0. Wayne color and flavor were considered to be particularly outstanding, while the texture was very good. The color of both sauce and slices is always a bright, full yellow, and the flavor is much like that of Northern Spy, if not more pronounced, epitomizing "apple flavor." When compared with a dozen of the best cultivars, Wayne sauce ranked first or second in 7 of 10 years. The only noteworthy exception occurred in 1964 when the fruit had softened to a very low pressure of 10.5 pounds before processing and so was scored low in texture. Its average rank was lowest in canned slices where firm texture is of greatest importance.

Figure 7.—Taste panel evaluating applesauce made from different cultivars. Identified only by code, sauces are rated for best color, flavor, and grain. Wayne usually rates among the very best.

Table 5.—Applesauce and slices made from Wayne apples judged for color, flavor, and texture. Ten-year average score on a scale of 1-10, 10 being the best.

	Color	Flavor	Texture	Average rank among cultivars tested
Applesauce	8.0	8.0	7.7	4th of 36
Slices, canned	8.1	7.1	7.1	8th of 37
Slices, frozen	8.5	8.0	7.6	2nd of 33

The processing of Wayne fruits is expedited by their symmetrical shape and because they are large, mostly 3 inches in diameter. These attributes permit easy peeling and efficiency on the trimming line and provide a high processing yield. No stippin (bitter pit) develops, except in fruits from very young trees or over-vigorous grafts.

Although the cores of Wayne fruits are larger than those of some other cultivars, processors have found

that with a slightly larger seed-celling knife, carpel fragments can be removed during slicing. However, large cores could become more of a problem as dicing becomes more popular, requiring either a larger coring knife or precutting the apple into two or four parts to facilitate seed cell removal before dicing.

Delayed harvest of Wayne means a short storage life. Like Mclntosh and Wealthy, Wayne ripens rapidly in the warm early season if held in an outdoor or unrefrigerated storage. But if Wayne is treated as an early extension of the sliced Spy pack and consistently processed without undue delay, it will find an important place in processing. It can also be used to improve the early blend with such apples as Wealthy.

SYSTEMS APPROACH TO WAYNE PRODUCTION

Growers accustomed to handling Mclntosh, Golden Delicious, and Rhode Island Greening have experienced difficulty in adjusting to Wayne production, but successful growers of Northern Spy have much less difficulty with Wayne. Two sets of suggestions are offered, the first for handling trees just going into the orchard; the second for handling trees approximately 5 years old.

Establishing a Wayne Orchard—Only a precocity-inducing stock should be considered. Both M.7 and MM. 106 have induced early and relatively heavy fruiting of Wayne. On a soil with impeded sub-drainage, MM. 106 should be selected. Either stock is satisfactory on a porous soil. On marginally drained soils, fire blight susceptibility and late retention of leaves are accentuated.

Wayne has been very productive on M.9, and the grower who prefers fully dwarfed trees should give serious consideration to raising Wayne/M.9 trees tied to stakes. The Wayne/M.9/M.2 interstem system has been effective in Wayne County, N. Y. and the Wayne/M.9/MM.1O6 system should be considered. The Wayne/M.26 combination is very susceptible to fire blight. In addition, a few cases of possible incompatibility have been reported. For these reasons, the Wayne/M.26 combination should not be used. Temporary basal staking is recommended for Wayne/MM.106 and interstem trees. Permanent support is suggested for Wayne on M.7 or M.9.

Wayne trees should be pruned back to about 36 inches when set. Several of the buds immediately behind the cut will break. New shoots should be selected as permanent scaffolds and leaders before they are more than 2 or 3 inches long. The topmost strong shoot should be left for a leader, the third or fourth shoot down should be retained, and the rest of the shoots spaced about 6 inches apart around the tree down to the 22- to 24-inch level should be selected for scaffolds. All other shoots should be rubbed off.

This selective rubbing should be followed in mid-June by inserting crotch spreaders. Spring-type clothes pins and wooden toothpicks are readily available, inexpensive, and easy to use. If they are installed when the shoots are 4 to 6 inches long and growing vigorously, crotch angles of 70° to 80° will be established by autumn, even though the initial angle was only 10° to 15°. Also, at this time, any unwanted shoots should be cut back to half their length.

During the first winter, the selected leader and scaffolds should be headed back by about one-quarter, primarily to stiffen the framework. Excessively vigorous shoots should be removed if they compete with selected branches. Short shoots should be left untrimmed. In mid-June of the next growing season, the extra shoots which will develop in response to these cuts should be removed. Final selection of scaffolds should be completed at this time and spreaders inserted on the rest of these selections.

During the second winter, leaders and scaffolds should be lightly tipped. Heavy spreaders, either notched laths or the Heinicke type, should be used to bring the scaffold angles down to about 45° to 50°. A flatter angle at this time will stimulate too much lateral shoot growth. Fertilizer application should be minimal.

During the third winter, the central leader and scaffold leaders should be very lightly tipped. New spreaders should be used to bring the scaffold angles down to about 70°. This spreading should be accomplished before petal fall, since the objective is to stimulate fruit bud formation. If the tree has become too dense, a few branches can be removed in June, but no later than the first week of July.

Flowering is expected in the fourth spring. At this time, a coarse spray of NAA 20 ppm and Sevin (l1/2 lbs/100 gal) should be applied with a hand gun to the top of the central leader to prevent overcropping and the deformation of the leader by too heavy a fruit load. In lieu of this, fruit should be removed from the top of the central leader by hand.

Pruning during the fruiting years should be designed to admit light to the lower scaffolds and to prevent the loss of good fruiting wood in the lower center of the tree. This means that the central leader should be cut back to 2-year-old wood at about age 6 or 7, and the heaviest pruning should be done in the upper parts of the tree. The pruner should take advantage of the dwarfing effect of a cut into 2- or 3-year-old wood.

Handling the Untrained Older Tree— If 1- and 2-year-old wood is heavily shaded during the early growing season, few fruit buds will be formed and most of those that are initiated will be too weak to be viable. Opening up the tree so that light can penetrate

into this wood is a major objective of pruning and spreading.

Probably as a result of plant growth regulator distribution, buds on upright branches tend to remain (vegetative, while buds on limbs that are horizontally oriented tend to form fruiting spurs. Thus, spreading encourages the formation of fruiting spurs.

Spreading 4-, 5-, or 6-year-old trees is a difficult task, but it appears to be necessary with Wayne. Heinicke's system of using a padded 2 x 4 as a fulcrum to prevent crotch splitting should be used. Spreaders 18, 24, or 30 inches long will be required in most cases. All lateral limbs should be spread, even though there is clearly an excess of these at the 24- to 30-inch level above the ground; the extras can be removed after the tree has been brought into production. Smaller spreaders can appropriately be used in the top portion of the tree. On most trees, the spreading by itself is enough to open up the tree (Fig. 5). Little or no pruning should be done because pruning tends to delay bearing.

Nitrogen fertilization should cease until fruit production begins. Once production has started, application of nitrogen should be regulated by foliar analysis and by aiming for an extension growth of about 18 inches.

Northern Spy has responded very well to Alar applied to the top of the tree canopy about a month after bloom. Such treatment should be tried on a small scale on Wayne with a view to reducing the extension growth.

Several materials, including Alar and TIBA, have been used on other cultivars to stimulate fruit bud formation. This approach should also be tried on Wayne, in combination with the spreading practices considered earlier.

Appropriate measures to control fire blight should be taken. Blossom sprays of streptomycin should be applied when weather is favorable for fire blight.

CONCLUSIONS

Wayne remains the best processing variety to precede Rhode Island Greening. Its horticultural shortcomings have been made quite conspicuous by these factors: (a) Wayne was very heavily planted immediately after its introduction and before fully tested systems for its culture had been developed; (b) Many growers have attempted to handle Wayne as casually as Mclntosh trees; and (c) The processor, not realizing that this is truly an early fall apple that ripens rapidly in storage, has often failed to process the fruit at its prime, which means in October.

A simple orchard practice—tree training by scaffold selection and spreading of crotch angles—can greatly increase the productivity of this new cultivar. Growers who now have untrained Wayne trees old enough to begin bearing should apply the horticultural principles described in this bulletin, particularly the use of limb spreaders to provide light on the insides of the trees. A young orchard of Wayne can be developed into an asset if the grower is aware of the variety's attributes and is willing to take them into account. The exceptional quality of the fruit, especially considering its early season, merits the effort.

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