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Northeastern United States Strawberry Cultivars

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The Region and its Strawberry Needs

For the purpose of this discussion, we shall consider the northeastern U.S. to be the Middle Atlantic States—New York, Pennsylvania, New Jersey, Maryland, Delaware, Virginia and West Virginia, and the New England States—Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire and Maine.

This area generally has sufficient rainfall over a very diverse array of topographical situations, soils and microclimates. Although many of the regions' cultivars are tolerant of numerous pathogenic fungi, most of them require some chemical pest control. Persistent fungus problem diseases are red stele, verticillium wilt, leather rot, gray mold, leaf scorch, leaf blight, powdery mildew and black root rot complex. Preplanting soil nematocide treatments are generally recommended, as are postplanting insecticides for the aphid vectors of virus diseases, for strawberry clipper, lygus bugs, sap beetles and a variety of chewing insects.

Cultural System and Market Outlet Shifts

Ten years ago the region produced fruit, from mostly matted rows, almost exclusively for the pick-your-own and roadside market trade. A relatively few strawberry specialty farms were producing berries on raised beds with close planted, spaced matted rows and experimenting with chemigation and planting time and distance variations. Weed control and renovation techniques were being used which extended profitable planting life to five years and more. Demand for the product was strong, prices were good and production was increasing rapidly.

A series of difficult winters in the early 1980's led to plant shortages, the use of nursery plants from outside the producing region and some increased disease and cultivar identity problems. Evidently permanent population shifts (like the increase in two wage earner families), a series of early and very warm harvest seasons, overproduction, and reduced price differential between customer-harvested and retail outlet

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fruit combined to make the pick-your-own market less profitable.

Near the end of the decade, flat matted row culture is still the dominant growing system, but raised bed culture of ribbon rows (very close spaced single hills) is much more common. Preplant fumigation is considered a must; fertilizers and considerable pest and weed control chemicals are applied through the irrigation system, which is also considered essential. Plantings are now carried for three fruiting seasons. Spring planting is usual, with some summer and fall planting. A trend toward annual production is found only for the new day-neutral cultivars.

Very few successful strawberry growers in the Northeast now grow berries strictly for PYO sales. Acreage has been adjusted and most farms produce for two or more market outlets. PYO is usually one of the outlets served, combined with preharvested fruit for local markets, some on-farm processing and some fresh shipping sales. Out-of-season production is growing rapidly. A more sophisticated clientele is damanding high quality fruit.

Cultivar Shifts

A decade ago, 'Sunrise' and 'Earlidawn' were the principal early cultivars, with the newer 'Darrow' and 'Earligrow' promising, 'Holiday,' 'Surecrop,' 'Catskill,' 'Midway,' 'Redchief,' 'Fletcher' and 'Raritan' were prominent midseason cultivars. 'Guardian,' 'Delite,' 'Marlate,' 'Vesper' and 'Sparkle' were widely grown lates, with 'Bounty' and the new 'Scott' promising.

Now the remarkable 'Earliglow' berry dominates the early cultivar production, sharing it with the productive 'Honeoye' in the colder regions. 'Earliglow' combines excellent flavor with *Botrytis*, red stele and verticillium wilt resistance, with fruit firmness, deep color, medium to large fruit size, medium high production and usefulness for either fresh or processed fruit. 'Honeoye' is larger-fruited, more productive and brighter in color than 'Earliglow,' but it is not resistant to root diseases and tends toward bitterness and tender skin when ripening temperatures are high.

In the early midseason, 'Lester' is gradually replacing both its 'Raritan' parent and 'Surecrop.' 'Annapolis' and particularly 'Cornwallis,' which has an 'Earliglow' parent, show promise. 'Lester' is a very attractive fresh fruit berry that is sweet and dry-textured. Its marketable percentage is very high, and the plant is tolerant to red stele and most leaf diseases.

In midseason and late midseason, the very balance 'Redchief' cultivar continues widely adapted and the dependable and dual purpose, 'Midway' is being grown in limited areas. 'Raritan' is also being replaced by 'Honeoye' which is yielding in turn to the more hardy and equally productive 'Kent.' The firm and large-fruited 'Allstar,' suitable for shipping, is replacing 'Guardian.' 'Scott' continues to be a solid, high yielding berry that is consistently good for texture, color and processing. The newer 'Jewel' and 'Glooscap' are very productive, firm, high-flavored, dual purpose types, which unfortunately are susceptible to red stele.

In the late season, 'Sparkle,' 'Delite' and 'Bounty' are being challenged by 'Blomidon' and 'Lateglow,' a pair of productive, fine flavored berries. 'Blomidon' is tolerant to many leaf diseases, 'Lateglow' highly resistant to root diseases.

During the summer and fall, 'Tristar' and 'Tribute' are the most reliable day-neutral types. In warm weather, these produce berries which are small-fruited and production is somewhat cyclic. These traits can be alleviated by surface mulch, enhanced water and nutrient supply and reduced plant temperatures. Certain California day-neutrals like 'Hecker,' 'Fern' and 'Aptos' are initially and periodically more floriferous than 'Tribute' and 'Tristar,' but

the western day-neutrals suffer from disease susceptibility and stress during summer heat periods. 'Selva' is not a reliable summer and fall fruit producer in the Northeast.

Trends in New Cultivar Production

At the request of the industry, we have given day-neutral breeding a larger emphasis in our improvement program. Emphasis has been placed on medium runnering, high vigor, and consistent but more moderate levels of summer fruiting, with more consistently large fruit size. Selections EB 454, 460 and 461 are the most promising strong day-neutrals; EB 390, 410 and 411 the best intermediate strength day-neutrals. These are grown on raised beds, either as spaced matted rows, or as mulched single hills.

Short-day emphasis aim to combine vigor and broad disease tolerance with fine fruit flavor, improved shelf-life, dual purpose fruit usage and the high color, firmness, size, etc. levels already achieved. Highly promising selections now are: Earlies—MDUS 5129, 5130, 4923 and 4787; Mids—MDUS 4552 and 4589; Lates—MDUS 5084, 5086, 5266 and 4740.

Somaclonal selection at various places has produced some interesting infividuals, but the critical comparison between hybrid seedling and somaclonally induced variability has yet to be made.

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Southern United States Strawberry Cultivars[1]

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The past 10 years have brought many changes to strawberry production in the South. Florida and Louisiana maintained their well established shipping industries but not without cultivar changes. The Arkansas shipping industry disappeared, along with an estimated 400 acres, but 'Cardinal' held its place as the states leading cultivar. Tennessee experienced tremendous growth, expanding from 700 to 2400 acres. Many states matured through their "pick-your-own" infancy, developing strong, competitive markets. Other states, long accustomed to the crop, found consumer interest waning and now look toward an uncertain future. A few are just discovering strawberries as an alternative crop and are excited about their potential.

Support for strawberry research also increased over the past 10 years. Cultivar trials in the southern region were expanded or established, production practices were improved and alternative cultural systems developed. Grower education became a priority in many extension systems and growers reached

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