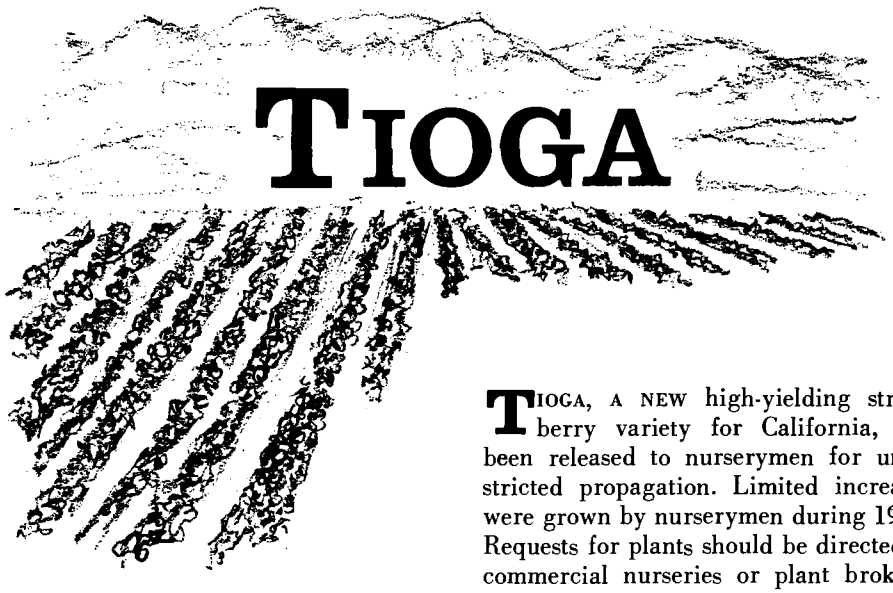
R. S. BRINGHURST • VICTOR VOTH



TIOGA

A New California Strawberry

TIOGA, A NEW high-yielding strawberry variety for California, has been released to nurserymen for unrestricted propagation. Limited increases were grown by nurserymen during 1963. Requests for plants should be directed to commercial nurseries or plant brokers. Virus-free stock eligible for entry in the California Strawberry Certification Program is available for nurserymen from the Foundation Plant Materials Service, University of California, Davis.

Tioga was selected at the Wolfskill Experimental Orchards, University of California, Davis, in 1955 from a population of about 300 plants. The Fresno and Torrey varieties (released in 1961) were selected that same year from a population of about 300 sibmates grown at Torrey Pines. Another sib population of about 300 was grown near Lancaster, Los Angeles County, the same year. Thus three varieties were named from a total population of about 900.

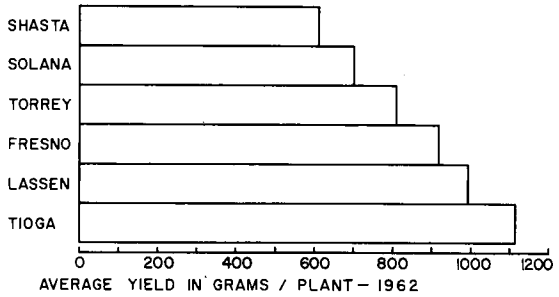
Tioga was tested as Cal. 53.9-2. The female parent was the Lassen variety, and the male parent was Cal. 42.8-16 whose female parent was the Sierra variety. On a percentage basis, Tioga, Fresno and Torrey are derived from: Nich Ohmer—31.5%, Blakemore—15%, U. S. 634—14%, Banner—9.5%, Fendalcino—9.5%, U. S. 543—9.5%, N. Y. 4626—8%, and Narcissa—3%.

Tioga will yield at least as much as Lassen under optimum conditions, and in almost all of the tests, it has yielded significantly more than Lassen. Tioga has also consistently outyielded all other California varieties that it has been compared with, including: Shasta, Solana, Fresno, Torrey and Wiltguard.

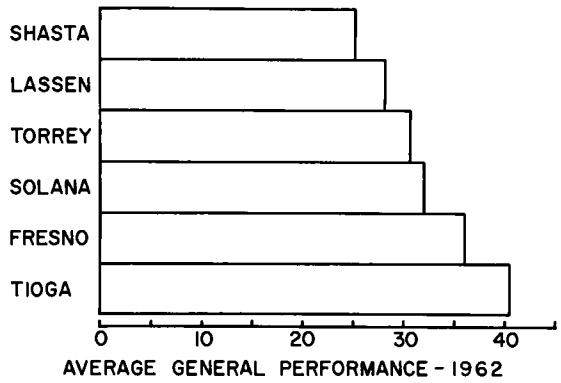
Tioga fruit has averaged about 10% larger than that of Lassen. It is also larger than Fresno, Shasta and Torrey fruit, and only slightly smaller than Solana fruit.

In appearance, Tioga is at least as attractive as prime Shasta and considerably superior to that of Lassen. The fruit is long and conical with a tendency toward wedginess. The color is slightly lighter than that of Lassen, and the finish is exceptionally glossy. Pollination is usually complete and the fruit is generally smooth from all types of plantings. The achenes (seeds) are medium in size, bright yellow in color, and positioned

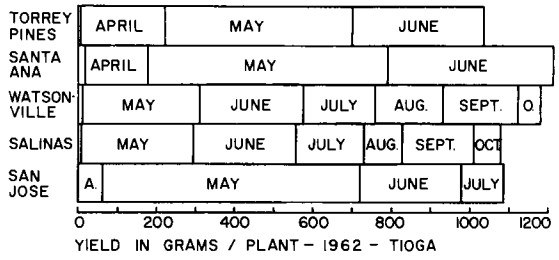
Tioga strawberries harvested at midseason in southern California.



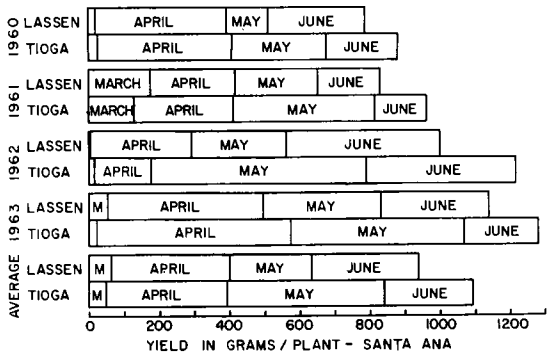
Graph 1, comparing the average total yield of summer-planted plants at five locations (San Jose, Salinas, Watsonville, Santa Ana and Torrey Pines) for six varieties during 1962. Differences among varieties were highly significant. Differences among locations within varieties (not shown) were not significant. Plant density was about 25,000 per acre. A yield of 454 grams per plant is equal to about 12.5 tons per acre.



Graph 2, comparing the average general performances (a derived value including weighing of total yield, fruit appearance and fruit size) of summer-planted plants at five locations (San Jose, Salinas, Watsonville, Santa Ana and Torrey Pines) for six varieties during 1962. Differences among varieties were highly significant. Differences among locations (not shown) within varieties were significant for Solana and Tioga, highly significant for Lassen, and not significant for the others. Significant differences were largely due to higher scores at Santa Ana.



Graph 3, comparing the first-year production patterns and total yield from summer plantings of Tioga during 1962 at five locations. Differences in total yield among the locations were not significant. Plant density was about 25,000 per acre. A yield of 454 grams per plant is equal to about 12.5 tons per acre.



Graph 4, comparing the first year production pattern and total yield from summer plantings of Tioga and Lassen at Santa Ana for four years. Differences in total yield for the two varieties are highly significant. The progressive increase in yield represents improved cultural practices. The low March-April yield in 1962 was due to a killing February frost. Plant density was about 25,000 per acre. A yield of 454 grams per plant is equal to about 12.5 tons per acre.

flush with the fruit surface, thus providing maximum protection from handling injury. The calyx separates from the fruit very easily and leaves a clean scar, similar to the Fresno variety.

Tioga fruit is firmer than any other University variety. In descending order of firmness they rank as follows: Tioga, Fresno, Shasta, Torrey, Solana and Lassen. The ability of the fruit to tolerate the handling and storage involved in fresh shipment to distant markets depends on firmness.

Considering the first month of harvest, production starts on Tioga about the same time as Fresno, somewhat later than Torrey, Lassen or Solana, but ahead of Shasta. Tioga consistently outyields any of these varieties if the first 60 days of harvest are considered, however.

Tioga plants are vigorous and prolific in the nursery and store very well for summer planting. They are tolerant of warm winter growing conditions and salinity. Plants usually escape serious virus infection although they are only medium in tolerance to virus. Tioga is about as resistant to mildew as Lassen, and chemical control is usually necessary. The variety is highly susceptible to Verticillium.

Tioga (with its sister varieties Fresno and Torrey, and also the Solana variety) is regarded primarily as a replacement for its parent, Lassen. However, the outstanding performance record of Tioga in several years of testing in all of the important California growing areas, justifies a recommendation for commercial use in all strawberry areas of the State.

Tioga has performed best in all locations from summer-planted, stored plants. For optimum performance, summer plantings should usually go in earlier than Lassen, Torrey or Shasta—and about the same time as Fresno or Solana. If Tioga is planted too late, the yield is greatly reduced.

Winter-planting tests with low elevation plants have not been very successful. However, properly timed winter plantings of high-elevation plants with clear polyethylene applied at planting time showed promise in the preliminary evaluations of 1964 production plantings.

Fertilizer requirements are considerably less with Tioga than for the Shasta variety, and excessive fertilization should be avoided.

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