florets that are pure white and one and one-half times larger than those found on other cultivars. 'Shasta', in addition, often has 5-15 inner sterile florets dispersed among the center fertile florets of the inflorescence. The attractive green foliage is the background for the bright red, upright fruit clusters for several weeks in late July. The vertical main trunk with tiered horizontal branches provides a statuesque focal point in the winter landscape. The plant is equally effective as a specimen or in a massed group, and is particularly striking when planted so as to be viewed from a higher elevation.

Availability

'Shasta' has been commercially propagated from plants previously distributed to wholesale propagation nurseries under the cooperative programs of the U. S. National Arboretum. The cultivar will be introduced by the National Arboretum in 1979. A subsequent distribution will be made to arboreta and botanic gardens. The U. S. National Arboretum does not have stock of this cultivar available for general distribution.

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'Oklamex Red' Sweet Potato[1]

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'Oklamex Red' is a new high yielding, "yam type" sweet potato (*Ipomoea batatas* (L.) Lam) with outstanding table and freezing quality, jointly developed and released by the Oklahoma and New Mexico Agricultural Experiment Stations. This new cultivar, which was tested in Oklahoma, New Mexico and other states under the designation Oklahoma 64-59, is a table and market type similar to 'Allgold,' 'Redgold' and 'Jewel.'

Origin

'Oklamex Red' originated from a cross made by the late H. B. Cordner of the Oklahoma Agricultural Experiment Station of B 1564, a USDA Beltsville line, and PI 153655, an introduction from Tinian Island (Fig. 1). B 1564 had L-155, L-5, 'Triumph,' 'Americano' and open pollinated lines in its parentage. 'Americano' came from Cuba; 'Triumph' resulted from the cross of 2 seedlings brought from Panama about 1857.

'Oklamex Red' was made available for regional testing after preliminary trials at the research farm, Perkins, Oklahoma. It was grown in New Mexico in observational trials in 1967 and 1968 and in comparative yield trials from 1969 to 1977.

Description

'Oklamex Red' is in the same market class (yam type) as 'Allgold,' 'Redgold' and 'Jewel.'

Vines are green, vigorous and intermediate to coarse in texture. The foliage density is moderate and the leaves are lobed and distinctly shouldered. Roots have a blocky shape, are medium to large in size and have an attractive dark-red skin with carotene immediately beneath it. Flesh is a bright salmon color which remains bright when cooked and is extremely sweet and moist with high carotene content. Roots remain firm in storage and are good sprout or plant producers.

Performance

In 9 years of trials at Portales, New Mexico, 'Oklamex Red' yielded well compared to the standard cultivars 'Centennial' and 'Jewel' (Table 1). Each year, there were 6 to 9 cultivars in the replicated trial (1). LO-69, LO-323, L1-207, VP9-51, Ti 1885, 'Jasper,' 'Hopi,' 'Kandee,' and NC 320 ('Caromex') were included in the replicated trials from 1975 to 1977. Least significant differences (LSD) were calculated on the basis of all the cultivars included in each year. 'Oklamex Red' produced considerably higher yields of U. S. No. 1 and total marketable roots than 'Centennial' and was equal to 'Jewel.'

'Oklamex Red' is resistant to stem rot (wilt) caused by *Fusarium oxysporum* f. *batatas* (Wr.) Snyd. & Hans. (Table 2). Reaction to stem rot was determined on the basis of the extent

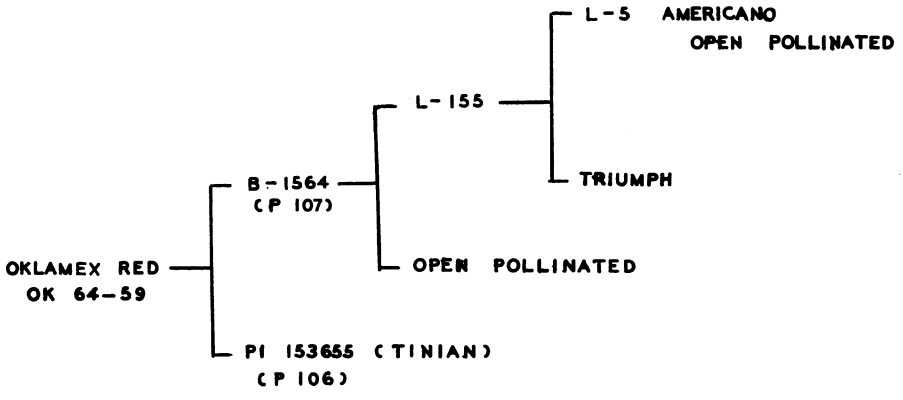

Fig. 1. Pedigree of sweet potato cultivar 'Oklamex Red.'

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Table 1. Yield of 'Centennial,' 'Jewel' and 'Oklamex Red' sweet potatoes included in the yield trials, Portales, N.M; 1969 – 1977.

Cultivar	Yields (MT/ha)[z]									9-year avg
	1969	1970	1971	1972	1973	1974	1975	1976	1977	
					U.S. #1					
Centennial	6.6	14.4	13.9	19.1	18.2	6.6	5.7	16.8	9.0	12.3
Jewel	8.0	20.8	24.3	31.5	28.7	10.6	3.5	13.3	14.2	17.2
Oklamex Red	6.7	19.1	20.4	24.2	19.1	17.7	3.2	21.8	20.9	17.0
LDS 5%	5.3	4.1	3.9	5.7	5.0	3.9	NS	(y)	NS	4.0
					Canner grade					
Centennial	4.7	4.1	5.3	8.0	7.7	1.5	5.3	16.7	1.9	6.1
Jewel	4.4	4.9	10.3	8.1	9.6	2.7	3.4	7.7	6.8	6.4
Oklamex Red	1.6	4.8	7.8	9.9	11.0	3.7	2.5	9.6	7.4	6.5
LDS 5%	3.2	1.7	2.1	2.7	3.6	1.0	2.4	(y)	NS	NS
					Total marketable (U.S. #1 + Canner + Jumbo)					
Centennial	12.1	21.2	19.8	30.9	27.9	8.5	12.4	35.8	15.7	20.4
Jewel	16.6	27.5	24.9	42.7	41.9	13.6	7.9	22.7	25.5	25.9
Oklamex Red	10.8	25.2	28.6	37.1	30.6	26.1	5.9	33.8	30.1	25.4
LSD 5%	6.9	5.3	4.1	6.8	6.4	5.1	NS	(y)	NS	NS

[z]MT/ha ÷ 0.06 = bu (55 lb.)/acre

[y]'Oklamex Red' was not replicated in the 1976 trial

Table 2. Stem rot index of 'Oklamex Red' and other sweet potato cultivars, Oklahoma, 1965-1967.

Cultivar	Stem rot index[z]		
	1965	1966	1967
Oklamex Red	10	11	5
Allgold	19	61	60
Unit #1 Puerto Rico	86	89	98

[z]0-45 = resistant; 46-70 = intermediate; 71-100 = susceptible

Table 3. Root knot index of 'Oklamex Red' and other sweet potato cultivars, Oklahoma, 1965 – 1967.

Cultivar	1965		1966		1967	
	Field index[z]	Root index[y]	Field index	Root index	Field index	Root index
Oklamex Red	2.1	0.4	2.3	4.3	2.1	0.3
Allgold	5.0				3.4	25.4
Tanhoma	3.4		4.3	14.3	4.0	
Redgold	4.2				4.3	
Unit #1 Puerto Rico	2.3				4.0	

[z]1.0-2.9 = resistant; 3.0-3.9 = intermediate; 4.0-5.0 = susceptible

[y]No. nematodes per 100 g of root ; 0.0-2.9 = resistant; 3.0-8.9 = intermediate; 9.0 = susceptible

of vascular discoloration present at harvest when stems and crown of each plant were split longitudinally. Little or no discoloration was indicative of resistance, whereas, extensive discoloration or death of the plants was a susceptible reaction. A stem rot index for each sweet potato line or cultivar was calculated as a means of the individual plant scores.

'Oklamex Red' has intermediate resistance to southern root knot nematodes *Meloidogyne incognita* (Kofoid & White) Chitwood (Table 3). A susceptible reaction to root knot nematode was characterized by severe galling of roots, rough or cracked storage roots, mature female nematodes readily found in storage root tissue and varying degrees of necrosis of root tips of fibrous roots. The reactions of individual plants to root rot nematodes were rated on a scale of 1 to 5, with 1 being most resistant. A field index for each line or cultivar was calculated by dividing the sum of individual plant ratings by the total number of plants. A root index for each line or cultivar was calculated from the individual scores of 10 or more randomly field selected roots sliced 0.25 cm thick and the number of female root knot nematodes determined per gram of storage root tissue.

Availability

The New Mexico Agricultural Experiment Station will be responsible for maintaining roots of this cultivar and will provide material for increase and sale. A limited quantity of seed is available for distribution to seed producers and breeders upon written request to David C. H. Hsi, Plains Branch Station, New Mexico State Univ., Star Route, Clovis, NM, 88101.

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