

Screening Diverse Fig Cultivars for Commercial Potential

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UCDAVIS

NCGR Missions:



Acquire
Maintain
Characterize
and Distribute



Plant Genetic Diversity

- Our *Ficus* Collection pre 2005
 - 78 named fruit cultivars, mainly European origin, but also US
 - 44 regional selections
 - 28 caprifigs
 - 40 breeder's selections, mainly UC Riverside (Condit & Storey)
 - 5 species / interspecific hybrids, most *Ficus* species in Miami



New Figs received by NCGR 2005-06

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<u>Name</u>	<u>Name</u>	<u>Name</u>
Algerian (Watts)	Dark No. 1 Portugese	Harvey Adriatic
Asisi	Dawalki	Hearty Chicago
Barada	Dokkar	Hurricane
Becane	Double Header	Igo
Beers Black	Drap D'Or	Italian 169
Benaski Adriatic	Encanto	Italian 215
Bianchi (Polenski)	Encanto Brown Turkey	Italian 253
Big White (Moore)	Figue D'or	Italian 256
Black Jack	Frickmann Long Yellow	Italian 258
Blue Giant	Gazir	Italian 281
Bosnat	Green German 1920	Italian 320
Bourisotte	Green Italian 06	Italian 358
Caloia (Los Angeles)	Green Panachee	Italian 372
Charles Allen	Grise de Provance	Italian 395
Chater Green	Hacin	Italian 88

New Figs received by NCGR 2005-06

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Name

Jurupa

Kop Fiomi

Lattarula

Lemon

Long Yellow

Long Yellow (Furtado)

LSU Gold

LSU Purple

Maho

Monaco

Negra (Watts)

Negro Largo

Name

Nero Cesar

NSA #1

Oregon Little Red

Portuguese White

Red Italian

Renan's Strawberry

Roscoff

Rouge de Bordeaux

Sal's

Sierra

Spanish Amber

Standford

Name

Verdale

Vina #4

Violeta

Violette Sepor

Vista

White OC

White Russian

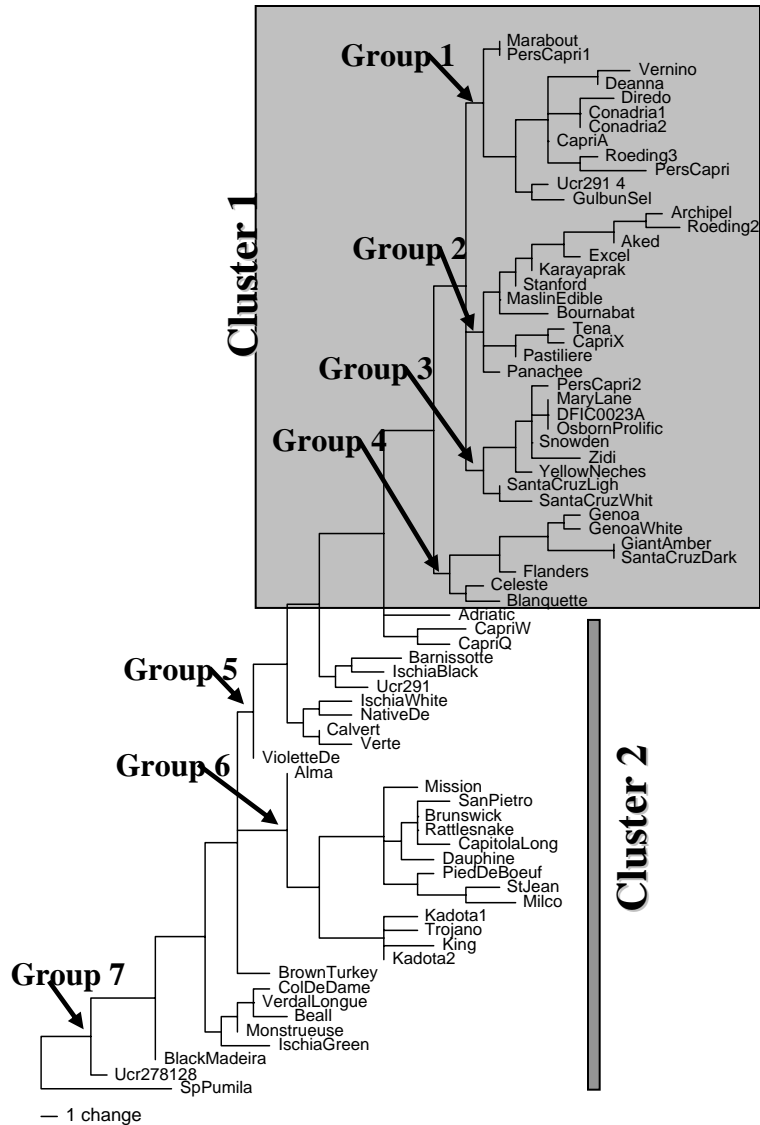
Yede Vern

Yougo #7

Some likely already in collection under other names!



Use of DNA fingerprints in figs:



- Identify misnamed varieties
- Determine genetic diversity in collection
- Initial effort identified 2 main clusters and 7 groups
- All 4 San Pedro types in Group 6!?
- >122 done now, will fingerprint entire collection this year

Genetic relationships among the 74 fig accessions using Nei and Li distance relationship, Clusters by UPGMA

Rate of Shoot Development in Fig Cultivars

- 0 buds show no swelling or bract separation
- 1 some swelling no bract separation
- 2 some swelling and bract separation
- 3 1st leaves apparent
- 4 multiple leaves apparent
- 5 largest leaves 2" long
- 6 largest leaves 4" long
- 7 largest leaves 6" long
- 8 2 leaves > 6" long
- 9 3 leaves > 6" long
- 10 4 leaves > 6" long

Rate of Shoot Development in Fig Cultivars									
	3.4.05	3.11.05	3.18.05	3.25.05	4.1.05	4.8.05	4.15.05	4.22.05	4.29.05
Snowden	0	2.5	4	4.5	7.5	8	8.5	9	10
Calimyrna	0	3	4.5	5	8	8.5	8.5	9	10
Mission	0	3	5	5	6	7	7	8	9
Violette de Bordeaux	0	3.5	5	5.5	7.5	9	9	9	10
Zidi	0	3	5.5	6	8	9	9.5	10	10
Brown Turkey	0.5	4.5	5.5	6	7	8.5	8	9	9.5
Marabout	0.5	4	6	6.5	7.5	10	10	10	10
Golden Celeste	1	3	5	5	6.5	6	7	7	9
King	nd	nd	nd	nd	nd	nd	nd	8	9
UCR291	1.5	3.5	6	6	8	10	9.5	10	10
152-4s	2	4.5	6.5	7	9	10	9.5	9.5	10
White TX Everbearing	2.5	4	5	6	7.5	9	8	10	10
UCR 276-14	2.5	5	6	6.5	8.5	9.5	9.5	10	10
Panachee	3	4.5	6	6.5	8	9.5	9.5	10	10
Adriatic	3.5	4	6	6.5	7	9	9	9.5	10
135-15s	3.5	4	6	6	8	8.5	8.5	9.5	10
Kadota	5	5	6	7	8	9	10	10	10
Marabout-c (Gulbun?)	5	5	7	8	8	9	10	10	10
Orphan	5	6	8	8	8.5	9.5	9.5	10	10
K6-5	5	5.5	8	7	9	10	10	10	10

2005 Fig Characterization: Brebas

<u>Cultivar</u>	<u>% Branches with Brebas</u>	<u>Brebas per branch</u>	<u>Breba score</u>
King	100	7.625	7.6
White Texas Everbearing	62.5	2.75	1.7
Marabout-c B (Gulbun?)	10	2.5	.25
135-15s	45	2.125	.96
Dauphine	52.5	1.5	.79
Orphan	47.5	1	.48
Mission	25	1	.25
Kadota	25	1	.25
Brown Turkey	40	0.875	.35
UCR 276-14	17.5	0.875	.15
Violette de Bordeaux	25	0.75	.19
St. Jean	5.5	0.375	.02
K6-5	25	0.25	.06
UCR291	12.5	0.25	.03

> note that brebas have been caprified

Breba Quality

<u>Cultivar</u>	<u>external color</u>	<u>Internal color</u>	<u>brix</u>	<u>fruit wt (g)</u>	<u>crack (%)</u>	<u>cavity diam (mm)</u>
135-155	Green/yellow	amber	16.5	58	0	4.4
Brown Turkey	Green/ purple	amber	17.1	123	90	6.5
Dauphine	Green/ purple	amber	21.3	90	0	3.4
K6-5	YG w/ green	amber	15.9	73	40	3.4
King	YG w/ green	pink	15	57	0	5.5
Marabout C.	YG w/ yellow	amber	17.4	57	20	0.5
Mission	Black	dark red	20.7	43	40	4.1
Orphan	YG w/ yellow	white	25.5	106	20	6.6
St. Jean	Green/ purple	amber	26.7	41	60	7.8
White TX	YG w/ yellow	amber	18.6	33	0	4.1

King or Desert King, the breba king (but these are main crop)!



2005 Fig Characterization: Brebas

		% Branches w/ Brebas	Brebas per branch
DFIC060	152-4s	0	0
DFIC032	Adriatic	0	0
DFIC057	Calimyrna	0	0
DFIC074	Col De Dame	0	0
DFIC161	Golden Celeste	0	0
DFIC086	Hative De Argentile	0	0
DFIC051	Marabout	0	0
DFIC075	Osborne Prolific	0	0
DFIC002	Panachee	0	0
DFIC087	Snowden	0	0
DFIC036	Zidi	0	0
DFIC026	Verte	0	0
DFIC003	Marabout-c A (purple)	0	0

Eary Maturity in Entire Fig Collection

8.5.05

>4 typical branches per tree

<u>cultivar</u>	<u>No. ripe per tree</u>	<u>Percent fruit ripe</u>	<u>No. fruit per branch</u>	<u>Length / branch fruiting wood (in)</u>
Yellow Neches	350	28	8	12
Orphan	200	23	6	10
Santa Cruz Dark	195	18	6	9
Giant Amber	175	17	6	7
Excel	130	18	5	8
Pied De Boeuf	128	13	6	9
Violette De Bordeaux	110	23	6	8
Ucr 278-128	110	12	5	8
Armenian	107	13	6	7
Archipel	100	43	5	5
Celeste	85	23	8	9
Genoa White	80	15	7	9
Brown Turkey	75	10	7	10

Yellow Neches= earliest bearing for main crop, and most fruit/tree. **HOWEVER**, small



2005 Fig Characterization: Persistence, bagged 5/23/05, assessed 8/18/05

	Number of Fruit / 2 Branch		Rating*	Notes
	Not Caprifified	Caprifified		
Brown Turkey	14	18	1	
King	16	11	1	
Orphan	13	14	1	
Osborne Prolific	19	19	1	
Panachee	13	16	1	smaller in bag?
UCR 276-14	14	15	1	
Verte	24	18	1	
Mission	6	10	1	
Kadota	28	24	1	
Marabout-c (Gulbun)	22	26	1	
1=clearly persistent		2=reasonably persistent		3=poor persistence

2005 Fig Characterization: Persistence

Number of Fruit / 2 Branch

Not Caprified

Caprified

Rating*

Notes

Adriatic	10	14	1.5	
K6-5	6	11	1.5	
St. Jean	19	23	1.5	
Violette de Bordeaux	22	23	1.5	
White TX Everbearing	16	23	1.5	
135-15s	6	9	2	inconsistent
UCR291	4	7	2	
152-4s	0	6	2.5	
Golden Celeste	5	14	2.5	much smaller in bag
Zidi	4	6	2.5	some fully develop
Calimyrna	2	13	3	much smaller in bag
Col De Dame	1	10	3	
Marabout	1	7	3	
Snowden	3	26	3	much smaller in bag

1=clearly persistent

2=reasonably persistent

3=poor persistence



Cultivar: Zidi

Mature

Date: 8/30/05

Fruit Quality: Main Crop		Firm (lb)	Frt wt (g)	Color (%)	SSC (%)	TA(%)
Cultivar	Maturity					
135-15s	Commercial	4.39	39.18	44.8	17.2	0.63
	Tree Ripe	1.83	41.92	68.3	24.2	0.4
K6-5	Commercial	3.35	36.07	49.3	14.7	0.54
	Tree Ripe	2.16	45.07	40.3	16.93	0.33
UCR 291	Commercial	3.28	47.36	85.3	16.3	0.59
	Tree Ripe	1.55	50.72	77.5	19.5	0.31
Marabout-c Gulbun?	Commercial	3.65	37.53	81.0	15.5	0.44
	Tree Ripe	1.76	40.67	89.8	21	0.29
White TX Everbear	Commercial	4.35	35.46	51.0	18.2	0.62
	Tree Ripe	2.23	41.82	50.0	24.45	0.33
Calimyrna	Commercial	5.27	42.94	46.3	15.6	0.43
	Tree Ripe	2.29	49.49	68.6	20.33	0.33
Kadota	Commercial	1.66	40.7	20.5	17.2	0.62
	Tree Ripe	1.53	37.82	67.0	22.2	0.28
Adriatic	Commercial	2.99	20.82	50.0	19.2	0.65
	Tree Ripe	1.17	29.04	81.7	23.2	0.37

Fruit Quality: Main Crop

Cultivar	Maturity	Firm (lb)	Frt wt (g)	Color (%)	SSC (%)	TA(%)
Zidi	Commercial	4.2	59.01	95.5	17.2	0.62
	Tree Ripe	2.12	57.81	99.5	24	0.4
Dauphine	Commercial	5.56	35.19	33.3	14.1	0.54
	Tree Ripe	2.12	39.97	68.8	18	0.29
Marabout	Commercial	3.79	47.36	84.5	16.6	0.46
	Tree Ripe		49.02	80.0	22.2	0.21
Brown Turkey	Commercial	2.75	50.39	86.8	13.6	0.38
	Tree Ripe	1.58	56.68	85.0	15.6	0.29
Mission	Commercial	3.49	28.02	91.5	16.8	0.52
	Tree Ripe	1.8	29.57	96.0	23	0.31
mean commercial		3.8	36.1	61.2	16.3	0.6
mean tree ripe		1.8	38.9	72.6	21.3	0.3
% increase tree ripe		-51.8	7.7	18.5	30.9	-38.0

Fruit Quality after Storage

Cultivar/Time	Maturity stage	Sound (%)	Decay (%)	Off color (%)	Cracking (%)	Blemish (%)
Brown Turkey						
7 days at 0°C	Commercial	90	0	0	0	12
	Tree Ripe	67	0	3	21	9
+2 days 20°C	Commercial	75	5	5		
	Tree Ripe	55	16	0		
+3 days 20°C	Commercial	70	10	20		
	Tree Ripe	38	24	7		

Fruit Quality after Storage

Cultivar/Time	Maturity stage	Sound (%)	Decay (%)	Off color (%)	Cracking (%)	Blemish (%)
Panachee						
7 days at 0°C	Commercial	63	0	16	0	31
	Tree Ripe	28	0	35	0	34
+2 days 20°C	Commercial	87	0	6		
	Tree Ripe	50	0	21		
+3 days 20°C	Commercial	73	0	19		
	Tree Ripe	50	43	29		



Cultivar: Panachee

Mature

Date: 8/30/05

Fruit Quality after Storage

Cultivar/Time	Maturity stage	Sound (%)	Decay (%)	Off color (%)	Cracking (%)	Blemish (%)
Zidi						
7 days at 0°C	Commercial	90	0	0	13	16
	Tree Ripe	85	0	8	10	8
+2 days 20°C	Commercial	71	0	5		
	Tree Ripe	54	16	0		
+3 days 20°C	Commercial	60	0	20		
	Tree Ripe	44	36	7		

2005 Fig Late Season Ripeness

	<u># ripe 9.7+</u>	<u># ripe 9.14+</u>	<u># ripe 9.22+</u>	<u># ripe 9.30+</u>
UCR291	920	405	175	61
152-4s	805	350	169	53
UCR 276-14	729	309	110	42
Zidi	411	241	158	86
Panachee	534	224	133	90
Bournabat	402	222	160	87
Blanquette	585	215	154	100
Mission	370	190	108	58
Brown Turkey	426	189	92	41
Ischia Black	284	174	116	74
Conadria	352	152	63	19
Snowden	287	127	86	61
Marabout	312	122	77	64
Calimyrna	261	121	75	29
Violette de Bordeaux	227	117	42	8

2005 Fig Quality Dried

	<u>Color Out</u>	<u>Color In</u>	<u>Quality</u>
Zidi	black	reddish brown	4.3
Pied De Boeuf	mottled brown to black	brown	4.2
Orphan	mottled tan to dark brown	caramel	4.2
Conadria	brown	caramel	4.2
Marabout	mottled tan to black	caramel	4.0
Snowden	tan	brown	3.9
Mission	black	dark brown	3.7
Adriatic	mottled tan to dark brown	reddish brown	3.7
Golden Celeste	brown to dark speckled	brown	3.6
Calimyrna	tan to brown	caramel	3.4
K6-5	tan	brown	3.4



Tentative Plans for 2006

- Broad assessment of flushing, breba production, and early ripening across entire collection
- Assessment of fruit production timing across caprifig collection
- Repeat and expansion of caprification influence
- Shelf life and quality assessment in more depth on fewer cultivars
- We look forward to your input!!



DFIC 0023
F. carica x
F. palmata

