

## Gleaning info on mechanical harvesters

*If you missed a Feb. 11 information meeting on mechanical harvesters, here's your chance to catch up.*

**G**rowers and harvesting contractors learned much about mechanical harvesters in a hurry Feb. 11 in Avon Park. Representatives of six harvesting manufacturers took five minutes each to pitch their harvesting systems to a capacity crowd of about 80 at South Florida Community College. Much more information was exchanged during and after lunch.

If you missed the meeting but wish you had been there, you're in luck. The following pages contain some key information from a 30-page booklet passed out at the meeting. Tables containing the manufacturers' answers to a series of "manager questions" are on page 17. The questions are about topics such as tree damage, crop reduction, grove preparation, fruit recovery, harvesting and roadside costs, and

cull rates. The tables will help you compare the harvesting systems. While the manufacturers' answers are similar on many questions, their answers differ on several topics.

The booklets also contained a listing of mechanical harvesting manufacturers and contractors. That information follows this article.

The meeting was sponsored by the Florida Department of Citrus' Citrus Harvesting Research Advisory Council and Citrus Abscission Registration Committee.

Advisory Council Chairman Paul Meador said 31 mechanical harvesting systems are operating in Florida this season. Sixteen of those are trunk shake-and-catch systems; eight are continuous canopy shake/shake-and-catch systems; six are monoboom trunk/scaffold shake systems; one is a canopy area shake/shake-and-catch system. A variety of other systems are

under development.

A slide Meador presented indicated mechanical harvesting can reduce harvest and roadside cost, increase labor productivity, increase income per acre, reduce labor management problems, and produce other benefits.

Reduced harvest and roadside costs would be a major boon to the Florida citrus industry, which spends about four times as much as the Brazilian citrus industry to harvest a box of oranges. University of Florida agricultural economist Fritz Roka said oranges in Sao Paulo, Brazil are harvested for about 38 cents per box, compared to \$1.60 a box in Florida.

Roka added that in order for mechanical harvesting to be viable in Florida, growers and harvesting contractors must have ample

**See INFO, page 18**

**Korvan,**  
**Committed to Citrus, Committed to Progress.**

Your first choice in harvesters  
ph: (360)354-1500 fax: (360)354-1300  
email: korvan@korvan.com  
www.korvan.com

**KORVAN**  
INDUSTRIES, INC.

## Typical Grower or Harvesting/Production

Manager Questions	Answers Provided By Harvester, Manufacturers or Harvesting Contractors									
	Coe-Collier		Stackhouse			FMC Food Tech	OXBO Int'l		Korvan Ind's	GIC Enterprises
	Trunk Shake & Catch	Canopy Shake & Catch	Monoboom Shaker	Direct Pickup System using the Monoboom Shaker	O.T.R. (Over the row) Harvester	Trunk, Shake and Catch	Canopy Shake & Catch 3220	Canopy Shake Only 3210	Canopy Shake & Catch 6000	GIC Canopy Shake & Catch
Tree damage, life shortened	Less than 2%, no life reduction	Less than 2%, no life reduction	Less than 1%, No decrease in tree life or vigor.	Less than 1%, No decrease in tree life or vigor.	Less than 1%, No decrease in tree life or vigor.	No tree damage, long term or short term.	No significant damage	No significant damage	Slight damage, life not shortened	Like ladders. No life reduction.
Next year's crop reduced	After May 1	After May 25	Yields generally increase, except late 'Valencia'.	Yields generally increase, except late 'Valencia'.	Yields generally increase, except late 'Valencia'.	No reduction, except late 'Valencia'.	Under study	Under study	No, except late 'Valencia'.	No, except late 'Valencia'.
Grove preparation and cost	Skirt, hedge and top. Cost: trunk shakers \$60 to \$100/ac in 1st year, then \$20 maintenance cut	\$40 to \$70/ac in 1st year for canopy shaker, then \$20 maintenance cut	None	Disk, remove trash & weeds, \$10 to \$50/acre.	\$20 to \$50/acre.	\$80/ acre first year; \$15/ acre/year thereafter	18' Top/ 36" Skirt / \$25.00/acre	18' Top / 36" Skirt / 18" clean trunk / \$25/acre	Yes, skirt and prune at \$20/acre.	Limited skirting, clear trunk of 16" desirable.
Crop left on tree and ground	3 to 5% left in tree, 4 to 6% on ground. Gleaning recovers this fruit	3 to 5% left in tree, 4 to 6% on ground. Gleaning recovers this fruit	None	Less than 7% total loss, w/o gleaning.	Less than 7% total loss, w/o gleaning.	7%	4% Tree / 4% Ground in prepared groves	4-6% Tree / None on ground in prepared groves	About 12% total to glean. Plan to decrease.	10-15% on tree, depends on operator proficiency and % of interior fruit.
Date to stop Valencia harvest	1-May	25-May	Early May	Early May	Early May	10-May	Under study	Under study	May 10-15	10-May
How to finish Valencia harvest	Hand	Hand	Hand	Hand	Hand	Hand	Under study	Under study	Hand harvest	Hand

Manager Questions	Answers Provided By Harvester, Manufacturers or Harvesting Contractors									
	Coe-Collier		Stackhouse			FMC Food Tech	OXBO Int'l		Korvan Ind's	GIC Enterprises
	Trunk Shake & Catch	Canopy Shake & Catch	Monoboom Shaker	Direct Pickup System using the Monoboom Shaker	O.T.R. (Over the row) Harvester	Trunk, Shake and Catch	Canopy Shake & Catch 3220	Canopy Shake Only 3210	Canopy Shake & Catch 6000	GIC Canopy Shake & Catch
H&R cost per box	\$1.15 to \$1.60 depending on yield	Numbers under development	\$.75 to \$1.50, depending on yield and workers.	\$.70 to \$1.50, depending on yield and prep. Costs.	\$.95 to \$1.50 depending on yield and cleanup costs.	\$1.25 to \$1.50 depending on grove preparation.	\$1.00 to \$1.30		Varies with grove conditions.	Less than hand, need more data.
Net Income increase or decrease	Increase	Increase	Increase	Increase	Increase	Increase	Increase \$50 - \$300/Ac	Increase .15 - .30/Box	Increase	Increase
Why use MH, hand pickers are everywhere	Increase income, get crop off in tight labor situations	Increase income, get crop off in tight labor situations	Labor productivity 2.5X, reduced costs, larger harvester profits.	Reduce costs, increase profit.	Reduce costs, increase profit.	To improve profits.	More Profit and Less Mgmt	More Profit and Less Mgmt	Lower and control harvest costs. Improve competitive position.	Increase income, reduce liability, greater reliability.
Safe to use during bloom	Yes, may avoid peak bloom	Yes, may avoid peak bloom	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Will loads have excessive trash	No excessive trash. Need trash sorting 1st year.	No excessive trash. Need trash sorting 1st year.	Typically cleaner than hand harvest.	Typically cleaner than hand harvest. Trash elimination & two hand sorters.	Typically cleaner than hand harvest. Has a cleaning system.	Acceptable trash levels.	No	No	No greater than hand	No. Destamper planned for production machine.
Will cull rates be higher	Same as hand	Same as hand	Typically lower cull rates.	Typically lower.	Typically lower.	No	No	No	Acceptable mechanical damage. No sorting.	A little. No sorting.



## INFO, from page 16


allocations of fruit trailers. Without enough trailers to transport fruit to processing plants, fast and expensive mechanical harvesting machines will be forced to sit idle.

Galen Brown, Department of Citrus Harvesting Program adminis-

trator, said less than 15,000 acres of Florida orange grove were mechanically harvested in 2001-02. Approximately 20,000 acres are expected to be mechanically harvested this season, he said.

## THE PRESENTERS

Presenters at the Feb. 11 meet-

ing were Will Elliott for Coe-Collier Citrus Harvesting; Matt Craven for Stackhouse Brothers Harvesting; John Crum for FMC Corporation; Bruce Wyatt for OXBO International Corp.; Scott Korthuis for Korvan Industries, Inc.; and Randy Schlossin for GIC Enterprises. 

# Manufacturers and contractors for mechanical harvesting equipment

(Source: "Florida Automation Systems for Florida Citrus," a booklet distributed at a Feb. 11, 2003 information meeting in Avon Park.)

## CANOPY AREA SHAKER SYSTEMS

**GIC Enterprises, LLC**; 85 Tenth Street, Atlantic Beach, FL 32233; Randy Schlossin, general manager; Tel: 904-249-9761; email: schlossin@msn.com

**JH Limb Rake**, 451 Sunset Drive, Oakville, Ontario, Canada L6L3N3; John Hosking, owner; Tel: 905-825-0893; email: hjhosking@sympatico.ca

## CANOPY PULL-AND-CATCH SYSTEMS

**Crunkleton Enterprises**, 306 N. Ruth Road, Avon Park, FL 33825; William Crunkelton, owner; Tel: 863-453-4743; email: crunkelton@tnni.net

**Kennco Mfg. Inc.**, P.O. Box 1149, Ruskin, FL 33575; Robin Knowles, general manager; Todd Fulk, vp sales; Tel: 800-645-2591; email: kenncomfg@aol.com; website: www.members.aol.com/kenncomfg

## TRUNK SHAKER SYSTEMS

**COE Orchard Equip. Inc.**, 3453 Riviera Road, Live Oak, CA 95953; Lyman Coe, owner; Tel: 530-695-5121; email: Coe@CoeOrchardEquipment.com; website: www.coeorchardequipment.com

**Coe Collier Citrus Harvesting, LLP**, 1320 N. 15th Street, Immokalee, FL 34142; Will Elliott, general manager; Tel: 239-658-6074; email: coecollier@aol.com; website: www.coecollier.com

**FMC Corporation**, 400 Fairway Avenue, Lakeland, FL 33802; John Crum, sales manager; Tel: 863-683-5411; email: john.crum@fmcti.com

**Stackhouse Bros. Harvesting**, 13501 Cogswell Road, Hickman, CA 95326; Don Stackhouse, owner; Tel: 209-883-2663

**Pacific Distributing, Inc.**, 5724 E. Whitmore Avenue, Hughson, CA 95326; Hans Bollerud, manager; Tel: 209-883-4032; email: sales@orchard-rite.com; website: www.orchard-rite.com

**Orchard Rite Ltd., Inc.**, 1702 Englewood Avenue, Yakima, WA 98902; Jim Dekoto, sales representative; Tel: 509-248-8785; email: sales@orchard-rite.com; website: www.orchard-rite.com

## Continuous Travel Canopy Shaker and Trunk Shake & Catch Equipment



### Coe-Collier Citrus Harvesting, LLP

*"Custom Harvesting, Equipment Rental & Leasing"*

1320 N. 15th Street Immokalee, FL 34142

239-658-6074 Shop • 239-658-6060 Office

239-658-6075 Shop Fax • 239-657-2337 Office Fax

Continued on page 19