



## FOOD TECHNOLOGY FACT SHEET

## FOOD AND AGRICULTURAL PRODUCTS RESEARCH AND TECHNOLOGY CENTER

WWW.FAPC.OKSTATE.EDU

OKLAHOMA STATE UNIVERSITY™

# Selecting and Purchasing Used Food Processing Equipment

**Timothy J. Bowser**

Food Processing Engineer

Used equipment can be a valuable time and cost saving alternative for food and agricultural product processing. Used equipment costs a fraction of the price of new equipment and is normally shipped immediately. Multiple pieces of equipment, or even an entire process line, can be obtained from a single source. This can reduce start-up and troubleshooting efforts, as well as shipping costs. While many pitfalls exist for the used process equipment buyer, the advantages can be worthwhile.

The first step in obtaining used equipment is to identify and assess the source or sources. Deal only with reputable suppliers and equipment owners. Ask for references and check them. Sources of used processing equipment generally fall into three categories:

- Dealers (local and national)
- Internet
- Owners

Local used equipment dealers are best identified by searching the area telephone book, or business directory, and by word-of-mouth. Classified advertisements in trade journals are a good source to find used equipment dealers and auction announcements. A partial list of national, used-equipment dealers is provided in Table 1. The listing is not an endorsement of any particular dealer or organization. A new variety of Internet-based, used-equipment sources is becoming very popular. Internet sources generally provide a place for posting and viewing equipment information and serve as an interface between the equipment owner and the end customer. Some may feature on-line auctions. Most of these Web sites are searchable and have features that will alert potential customers with email when certain equipment is posted to the site. Table 2 provides a partial listing of Internet-based, used-equipment Web sites.

Often the equipment owner liquidates machinery directly through an auction or other type of advertised sale. This can be an ideal avenue to acquire a complete processing line or pieces of equipment with a known history. It can also represent a cost savings since a purchase from the owner eliminates any re-seller's profit. Unfortunately, there is no known reliable method of identifying owner liquidation sales for a particular

type or model of equipment on a timely basis. The advent of the Internet auction may make this avenue of equipment acquisition more accessible in the future.

Quotations for used process equipment can be solicited by telephone, fax or in person. The purchaser should consider drafting a request for a quotation before any efforts are made to obtain quotations. Drafting a request for a quotation will help the purchaser solidify his needs on paper and facilitate subsequent discussions with vendors. Faxing requests for quotations to appropriate equipment dealers has proven to be an inexpensive and effective means of identifying used processing equipment. Visiting a used equipment dealer has enormous value. Often, a first-hand inspection of equipment stockpiles will identify appealing alternatives that would have otherwise been missed. When multiple pieces of equipment can be identified at a single source, a quantity discount may be negotiated. For additional information on the selection and purchasing process, please see OSU Fact Sheet FAPC-102, *Selecting and Purchasing Food Processing Equipment*.

Evaluation of equipment alternatives can be complicated, especially when several people are involved and opinions differ. The process can be streamlined by using a qualitative method of evaluation. Key features of the equipment to be evaluated (such as price, capacity and delivery) can be listed and assigned a weight, or importance, relative to other features when considering the needs of the specific project. The numerical weights are assigned according to a convenient, arbitrary scale such as 0 to 10. After the bids are received, the selected features are rated and given individual scores for each bid. Again, these scores are based on an arbitrary numerical scale. If the equipment is to be selected by a committee, the scores can be voted on or averaged. The total score for each quotation is obtained by multiplying the feature weight by its score and summing the results. The bid with the highest score is selected for purchase.

Maintenance and operation are two features of used equipment that merit extra examination. Will it be possible to effectively maintain and operate the selected equipment? Spare parts must be readily available. The original equipment manufacturer may no longer support obsolete models

**Table 1. Partial listing of national, used-equipment dealers**

DEALER	ADDRESS	PHONE	FAX	WEB SITE
Aaron Equipment Company	735 E. Green St. P.O. Box 80 Bensenville, IL 60106	630-350-2200	630-350-9047	<a href="http://www.aaronequip.com">www.aaronequip.com</a>
Alard Equipment Corp.	6483 Lake Avenue P.O. Box 57 Williamson, NY 14589	315-589-4511	315-589-3871	<a href="http://www.alard-equipment.com">www.alard-equipment.com</a>
Barliant & Co.	319 East Van Emmon Rd., Yorkville, IL 60560	630-553-6992	630-553-6908	<a href="http://www.barliant.com">www.barliant.com</a>
Campbell Soup Company Asset Recovery	Campbell Place Camden, NJ 08103		856-968-2808	<a href="http://www.campbells-equipment.com">www.campbells-equipment.com</a>
Frain Industries, Inc.	313 Rohlwing Road Addison, IL 60101	630-629-9900	630-629-6575	<a href="http://www.fraingroup.com">www.fraingroup.com</a>
Heritage Equipment Company (beverage)	9000 Heritage Drive Plain City, OH 43064	614-873-3941	614-873-3549	<a href="http://www.heritage-equipment.com">www.heritage-equipment.com</a>
Loeb Equipment & Appraisal Company	1210 Metro Park Blvd. Lewisville, TX 75057	972-353-5353	972-353-5355	<a href="http://www.loebequipment.com">www.loebequipment.com</a>
Machinery and Equipment Company	3401 Bayshore Blvd. Brisbane, CA 94005	415-467-3400	415-467-2639	<a href="http://www.machineryandequipment.com">www.machineryandequipment.com</a>
Madison Equipment Company, Inc.	3125 W. Carroll Ave. Chicago, IL 60612-1720	773-533-6600	773-533-5820	<a href="http://www.madisonequip.com">www.madisonequip.com</a>
Production Packaging & Processing Equipment Company (kettles)	1450 East Van Buren St. Pheonix, AZ 85006	602-254-7878	602-254-2630	<a href="http://www.kettles.com">www.kettles.com</a>
Reeves Equipment Company	783 Laurel Ridge Rd. Cleveland, GA 30528	706-219-3956	706-219-3984	
Schier Company, Inc. (dairy)	14459 S. 65 <sup>th</sup> W. Ave. Sapulpa, OK 74066	918-321-3151	918-321-5777	<a href="http://www.schiercompany.com">www.schiercompany.com</a>
Union Standard Equipment Company	4248 W. 47 <sup>th</sup> St. Chicago, IL 60632	773-376-5400	773-376-0634	<a href="http://www.unionmachinery.com">www.unionmachinery.com</a>
Universal Process Equipment, Inc.	1180 Rt. 130 South Robinsville, NJ 08691	609-443-4545	609-259-0644	<a href="http://www.upe.com">www.upe.com</a>
Wohl Associates, Inc.	50 Floyd's Run Bohemia, NY 11716	631-244-7979	631-244-6987	<a href="http://www.wohlassociates.com">www.wohlassociates.com</a>

**Table 2. Partial listing of Internet-based, used-equipment Web sites.**

DEALER	WEBSITE	PHONE	FAX
DoveBid, Inc.	<a href="http://www.dovebid.com">www.dovebid.com</a>	650-571-7400	650-572-8607
Equipment Outlet	<a href="http://www.equipmentoutlet.com">www.equipmentoutlet.com</a>	208-955-1132	208-887-4874
EquipNet Direct, Inc.	<a href="http://www.equipnetdirect.com">www.equipnetdirect.com</a>	888-371-6555	781-849-7668
Ethical Internet Sales, LLC	<a href="http://www.ethicalsales.com">www.ethicalsales.com</a>		908-222-0288
Free Markets Asset Exchange	<a href="http://www.assetexchange.freemarkets.com">www.assetexchange.freemarkets.com</a>	800-939-3261	512-684-2500
I-Com Industry, Inc.	<a href="http://www.foodprocessingindustry.com">www.foodprocessingindustry.com</a>	703-479-4266	703-479-0704

or components. For example, maintenance technicians experienced with pneumatic controls are scarce. Can the machine be retrofitted with digital controls, or can parts and service be obtained from other sources?

Inspection is a crucial step in the used-equipment selection process. A seller will rarely list the undesirable features of an item for sale, so the buyer must learn to investigate. Assistance from an experienced mechanic or engineer can be helpful in this area. Ask for an operator's manual and/or a maintenance logbook for the equipment. The existence of a maintenance log is a good indication that the machine was well taken care of. Obtain the serial number of the equipment and telephone the manufacturer to inquire about the first owner and intended use of the equipment. Table 3 lists some important inspection areas and examination tips for equipment inspection.

Safety features are an issue (listed in Table 3) that may require additional attention when purchasing used equipment. Older equipment may have met safety standards when first introduced to the market, but may fall short of current standards. Safety features on used equipment may be disabled or missing. Issues pertaining to safety must be resolved before the machine is put into operation for legal and moral reasons. The cost to upgrade equipment to meet current standards may be prohibitive.

Purchasing and installing used equipment may be the best alternative for a cost effective process installation. It can also be an exciting and potentially dangerous adventure. Research and investigation before purchasing will help improve the chances of success.

Table 3. Inspection areas and examination tips for used equipment.

INSPECTION AREA	COMPONENTS	EXAMINATION
Appearance	All	Is the machine generally well cared-for or does it have the appearance of makeshift maintenance? Are the components (if separated) marked and carefully packaged?
Log book		The existence of a logbook is a good indication of maintenance program.
Drive-train	Chains, sprockets, belts, sheaves, gearbox	Examine for stretched chains, worn drive belts and sheaves, stripped sprockets and gearboxes. Some problems can be identified when turning shafts by hand (if possible). Listening with the use of a probe (operating machinery) may also help.
Rotating shafts	Joints, alignment, key	Look for burrs, warped or bent shafts and cracks. Shafts should not wiggle when pulled by hand.
Bearings	Roller, sleeve	Examine quantity and condition of grease, oil, seals and mounting. Hint: remove grease zerts to inspect.
Lubrication	Oil, grease, filters, fittings	Examine for contaminants. Water will turn some oils milky white. Grittiness can sometimes be felt. Samples can be obtained and checked by a laboratory. Check filters.
Coatings	Paint, epoxy, tin, Teflon, chrome, rust and scale	Look for chips, flakes and scratches. Beware of fresh coatings that hide defects. Rust can sometimes be removed to reveal very little damage.
Welds	All	Smooth and crack-free, no slag or weld splatter present
Operation (capacity)		Operate machine and test for rated capacity. Usually, this operation must be arranged in advance with the equipment owner and requires processing materials and complete hookup of the equipment
Operation (noise)		Use a listening aid if necessary. Listen for thumps, grinding or unusual sounds.
Mating surfaces	Gasket	Surfaces should be smooth. Gaskets will be intact and flexible
Controls	Panel, switches, pushbuttons, displays, timers, alarms, outputs, interface, charts	Examine condition and operation of all components. Wiring in electrical box should be labeled and correspond to a posted or available diagram. Displays should be clear, not fogged or waterlogged.
Utility connections	Electric, steam, water, air, gas, hydraulics, chilled water, sewage and other	Determine capacities, such as Voltage, frequency and flow rate. Examine connections for integrity.
Fasteners	Bolts, clamps, pins, screws and snap rings	Examine for missing or damaged components such as stripped threads or head.
Safety features	Shrouds, insulation, kill switch, stickers, doors, vents and valves	Look for missing, damaged or disabled components. Stored energy contained in elements such as springs and air cylinders must be properly relieved.

# The Oklahoma Cooperative Extension Service

## Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; home economics; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and based on factual information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.