

University of Arkansas Rice Processing Program
Equipment/instruments

Equipment	Description/function	Model #	Manufacturer	City	State/ Country
Lab and Field Equipment					
Centrifugal rice dehuller	Removes hull from rough rice kernels	FC2k	Yamamoto Co., Ltd.	Yamagata	Japan
Convection oven	Direct method of moisture content measurement	1370FM	Sheldon Manufacturing Inc.	Cornelius	OR
Convection oven	Direct method of moisture content measurement	OV702G	Blue M	Dubuque	IA
Data loggers	Environmental data reading and recording (temperature, RH, etc.)	CR3000	Campbell Scientific	Logan	UT
Digital contact tachometer	Measures speed of rotation (e.g. number of rotations per unit time)	Extech 461891	Extech Instrments, Inc.	Waltham	MA
Dockage tester	Separates impurities in bulk samples	Dockage Tester	Carter-Day Co.	Minneapolis	MN
Dockage tester	Separates impurities in bulk samples	MC Kicker Grain Tester	Mid-Continent Industries, Inc.	Newton	KS
Hand-held (portable) rice husker	Removes hulls/husks from rice kernels	TR120	Kett Electric Laboratory	Tokyo	Japan
Hygrometer	Monitors dew point (temperature and RH)	Hygro-M2	General Eastern Instruments Corp.	Watertown	MA
Hygrometer	Monitors dew point (temperature and RH)	Hygro-M2 Plus	General Eastern Instruments Corp.	Watertown	MA
Laboratory mill	Mills 200 g rough rice samples	Grain Test	Satake	Hiroshima	Japan
Laboratory mill (2)	Mills 150 g rough rice samples	McGill No. 2	Rapsco	Brookshire	TX
Refrigeration system (3)	Cold storage of samples	Climate Lab AA-5460A	Parameter Generation & Control	Black Mountain	NC
Rice dehuller (2)	Removes hull from rough rice kernels	THU35A	Satake	Hiroshima	Japan
Sample divider	Splits bulk samples into two equal portions	STE-01	Seedburo Equipment Co.	Chicago	IL
Small bundle thresher	Separates rice kernels from panicles	SBT	Almaco	Nevada	IA
Temperature and humidity chamber (2)	Controls temperature and RH	ESL-4CA	Espec North America	Hudsonville	MI
Temperature and RH sensors	Measures and records air temperature and RH	HOBO H8/H08	Onset Computer Corporation	Bourne	MA
Temperature and RH sensors	Measures and records air temperature and RH	HOBO Pro v2 Loggers	Onset Computer Corporation	Bourne	MA
Temperature and RH sensors	Measures and records air temperature and RH	HOBO U10 Data Loggers	Onset Computer Corporation	Bourne	MA
Temperature and RH sensors	Measures and records air temperature and RH	HM141 indicator, 45/46 probes	Vaisala	Woburn	MA
Temperature probes	Measures temperature - digital read		Omega Engineering, Inc.	Stamford	CT
Video microscope system	Monitors and records magnified images over a 24 h maximum duration	Scopeman	Moritex		Japan
Ultrasonic cleaner (Sonicator)		14.5 gal Ultrasonic	Cole Parmer Instrument Co.	Vernon Hills	IL
Anemometer	Measures air velocity	8450-13E-V-STD-NC	Control Co.	Friendswood	TX
Bench mount spray dryer		Labplant	Armfield, Inc.	Ringwood	England
Physical properties					
Air comparison pycnometer	Measures density of kernels (in bulk)	Beckman 930	Beckman Instruments, Inc.	Fullerton	CA
Analytical balance (2)	Measures mass of small samples , 250 g capacity	AB 204-S /FACT	Mettler Toledo	Im Langacher Greifensee	Switzerland
Automated yield analysis system	Measures head rice yield	GrainCheck 2312	Foss North America	Eden Prairie	MN
Bulk density tester	Measures bulk density of grains	Cox Funnel type	Seedburo	Chicago	IL
Color meter	Spectrophotometer that measures color	Colorflex EZ	Hunter Associates Laboratories, Inc.	Reston	VA
Digital caliper	Measures kernel dimensions	CD-6"CSX	Mitutoyo Corp.	Kawazaki	Japan
Digital micrometer	Measures kernel dimensions (0.001 mm)	293-561-30	Mitutoyo Corporation	Kawazaki	Japan
Grain/seed imaging system	Measures color (e.g. chalkiness)	Winseedle Pro 2005aTM	Regent Instruments Inc.	Sainte-Foy, Quebec	Canada
Large-capacity scale	Measures mass of samples, 2000 g capacity	1200	Doran Scales, Inc.	Paramount Parkway, Batavia	IL
Large-capacity scale (2)	Measures mass of samples, 2000 g capacity	8800	Seedburo Equipment Co.	Chicago	IL
Microwave moisture analyzer	Measures moisture content by means of microwave resonance technology	Sartorius LMA200PM	Sartorius Mechatronics	Bohemia	NY
Milling meter	Measures milled/head rice milling degree	MM-1B	Satake	Hiroshima	Japan

Moisture meter	Measures individual kernel moisture content by capacitance	Motomco 919	Dickey John	Auburn	IL
Rheometer	Measures rheological properties	AR 2000	TA Instruments	Newcastle	DE
Rice grader	Separates head rice from broken		Satake	Hiroshima	Japan
Rice image analyzer	Measures kernel dimensions	RIA 1A	Satake	Hiroshima	Japan
Rice sizer	Separates kernels according to thickness	Precision Sizer	Carter-Day Co.	Minneapolis	MN
Rice sizer	Separates kernels according to length (head & broken)	Satake TRG	Satake	Hiroshima	Japan
Single kernel moisture meter	Measures individual kernel moisture content by electrical resistance	CTR500E	Shizuoka Sieki	Shizuoka	Japan
Single kernel moisture meter (2)	Measures individual kernel moisture content by electrical resistance	CTR800E	Shizuoka Sieki	Shizuoka	Japan
Single kernel property characterization system	Determines grain hardness index, moisture content distribution, etc.	SKCS 4100	Perten Instruments North America	Springfield	IL
Whiteness meter	Measures milled/head rice whiteness	Kett C-300-3	Kett Electric Laboratory	Tokyo	Japan
Chemical/Mechanical Properties					
Brabender viscoamylograph	Measures gelatinization properties and enzyme activity of flour		CW Brabender Instruments, Inc.	South Hackensack	NJ
Diode array NIR analyzer	Measures chemical and physical properties	DA 7200	Perten Instruments, North America	Springfield	IL
Dynamic mechanical thermal analyzer	Measures thermal properties	DMTA-V	TA Instruments	Newcastle	DE
Grain analyzer	Measures chemical and physical properties	Infratec	Foss North America	Eden Prairie	MN
Laboratory mill	Grinds grain into flour	3010-080P	UDY Corporation	Fort Collins	CO
Laboratory mill (2)	Grinds grain into flour	3010-030	UDY Corporation	Fort Collins	CO
Lipid extraction system	Fat/lipid content analysis	Soxtec Avanti 2055	Foss North America	Eden Prairie	MN
NMR analyzer	Measures chemical and physical properties	NMR Pro Analyzer	Bruker Optics, Inc.	Billerica	MA
Phase transition analyzer	Measures phase transitions of materials	PTA	Wenger Manufacturing, Inc.	Sabetha	KS
Rapid visco-analyzer	Measures paste viscosity	RVA-4	Rheometric Scientific	Piscataway	NJ
Texture analyzer	Texture analyses (stickiness, adhesion, breaking force measurements)	TA-XT2i XT-plus	Texture Technologies	Scarsdale	NY
Thermal mechanical analyzer	Measures dynamic change of solid materials	TMA7	Perkin Elmer	Waltham	MA
Thermogravimetric analyzer	Measures thermal properties based on mass change	Q50 TGA	TA Instruments	Newcastle	DE