

ISA



Labs Facilities Available Equipment



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27 Cooking Lab

41 Laboratório Professor Pais de Azevedo

Location	Equipment	Brand/Model	Un	Use
Edifício Ferreira Lapa				
Piso 0				
PAI-cereais (0.28)				
	AlveoLab		1	Viscoelastic properties measurement
	Fridge	Eletrolux	1	Sample conservation
	Oven	UDFCEMM423	1	Dry samples or material
	Oven	UDI	1	Dry samples or material
	Oven	Arianna TM	1	Dry samples or material
	3D Printer Foodini	Natural Machines	1	3D printing of food products
	3D Printer	3D Biotechnology Solutions	1	3D printing of food products
	Dry Aging	Dry Ager	1	Drying food products
	Chopin Alveograph	Chopin Technologies	1	Dough Analysis
	Chopin Alveograph	Chopin Technologies		Dough Analysis
	Fridge	Eletrolux	1	Sample conservation
	Fridge		1	Sample conservation
	Water Activity Meter (AW) for Material Moisture	aeADAM	1	Measure the unbound water vapor pressures to determine microbial spoilage, chemical and physical stability
	Scale	Kern		Weighing samples
	Mixolab2 Farinograph	Chopin Technologies		Dough characterization to evaluate the quality and baking performance of flours
	Mixograph		1	To test of the mixing properties of a dough
	Lab water bath	Julabo SW22	2	
	Eletrospinning		1	Produce nano- and micro-fibers
	Bimby Food Processor	TM6, Vorwerk	1	Process food
	Milk analyzer	Lactoscan		Quick analyses of milk on fat, non-fat solids, proteins, lactose and water content percentages, temperature (°C), pH, freezing point, salts, conductivity as well as density of one and the same sample directly after milking, at collecting and during processing.
	MicroDoughLab	Perten	1	Determines water absorption of flour, dough development time and other dough mixing parameters
	Planetary Micro Mill Pulverisette 14	Fritsch	1	Solid sample milling
	Fridge (chamber)	Friarco	2	Sample conservation
Lab. Lactícínios (0.23)				
	Lab water bath	Julabo 201F		
	Ultrasound Processor	UPH2000 Hielscher		To perform cell disruption, chemical reactions
	PEF (pulsed electric field)	Energy pulse systems		

Garagem	-80 °C chamber -80 °C chamber	Cryocell Snijders Scientific		
0.9	Oven	WTC Binder		
0.10	Digestor	Ethos Easy		
0.21	Fridge (chamber) Microwave			Sample conservation
0.25	Compressor			
Piso 1				
Aulas-investigação (Laboratórios 1.14 a 1.29) 1.14	Muffle Coulometer 684 KF + 703 Tistand pH reader Lab water bath with shaker Heating plates Bimby Food Processor Induction plate Oven Lab water bath with 6 positions	Heraeus Metrohom Orion Star A211, A212 Thermo Scientific Velp Scientifica Vorwerk Taurus Heraeus D-6450 Hanau P Select	1 1 1 4 1 1 2 2	Ash determination Análise do teor de água em amostras Medição de pH Food processing To dry material
1.15	Refrigerated centrifuge Centrifuge BagMixer 400 Oven Vaccum oven Vacuum evaporator Mufla Ultrasound processor Ultrasound bath Incubador refrigerado com agitação Refractometer Hygrometer	Hermle Labortechnik Z 383 K C4000 Centurion Interscience International Binder Heraeus Instruments vacutherm Julabo Branson Transsonic 700, Elma Vaisala HM40	1 1 1 2 4 1 1 2 1	Sample concentration Sample concentration Efficient laboratory blender for solid sample preparation To efficiently dry samples To concentrate samples To perform sample homogenization Refractive index measurements

**Laboratório de
Espectrofotometria
(1.17a)**

	Microplate reader	CLARIOstar Plus BMG LABTECH	1	Enzymatic measurements
	Spectrophotometer UV-Vis 916	GBC		
	Spectrophotometer UV-Vis	Agilent Cary 100		
	Spectrophotometer UV-Vis	Unicam		
1.17 (Balanças)				
	Scale	Kern ABT 100-5NM		
	Scale	Kern PLS 420-3F		
	Scale	Kern ABJ 220-4NM		
	Scale	Gram Serie CM		
Laboratório de Enologia (1.18)				
	Viscosimeter	Schott-Gerate	1	Kinematic viscosity measurements
	Dihstillier	Gerhardt Analytical Systems		
	Lab water bath	Selecta Preistern		
	Heating plates	Gerhardt		
	Ebulliometer			Instrument used for determination of the alcohol content of water-alcohol solutions
	Turbidimeter	2100N IS turbidimeter HACH		To measure the turbidity in aqueous samples
	Vacuum pump	Vacuubrand		
	Sulfilyser			To quickly and easily measure free and total SO ₂ with a very clear indicator of the end point.
	Potenciometer	Orion star A211 Benchtop pH meter, Thermo Scientific		
	Conductivity meter	Bench, Orion™ Star™ A212, Thermo Scientific		To measure conductivity
	Rotational viscometer	Fungilab Alpha R	1	To measure the viscosity of a fluid
	Ground mill	Retsh	1	Milling of solid samples
	Molecular sieves	Retsh	1	Sieving of solids
	Temperature chiller		1	To lower temperature
	Kneader		1	For high moisture doughs
	Fridge		1	Sample conservation
	Oven		1	
	Incubation oven		6	
1.19				
	Fridge	EDESA		Sample conservation
	Fridge	Confortec		Sample conservation
	Fridge	Fagor		Sample conservation
	Fridge	WTC binder		Sample conservation
	FTIR	Thermo Scientific	1	Chemical characterization
Sala de Lavagens (1.20)				
	Washing machine	Miele		

Oven	Selecta digitheat TFT
Oven	Memmert
Water destiller	
Ultrapure water destiller	

1.25					
HPLC			1	Separation and identification of polar compounds	
Pump L-7100	Merck Hitachi				
LC- 95 UV/Visible	Perkin-Elmer		1		
Pump series 200	Perkin-Elmer		1		
2487 Detector	Waters		1		
LC	Perkin-Elmer		1		
Pump series 410					
Autosampler 717 plus			1		
Fridge					Sample conservation
Fridge					Sample conservation
Fridge				Sample conservation	
Particle Charge Detector PCD 03 pH	Mütek		1	Measures the surface charge of dissolved or dispersed colloidal substances by polyelectrolyte titration Protein separation	
Electrophoresis (PS 3501)	Amersham Pharmacia Biotech		1		
Electrophoresis (LKB pump P-500)	Amersham Pharmacia Biotech		1		
Electrophoresis (LKB FRAC)	Amersham Pharmacia Biotech		1		
Fridge – 40°C	Friarco				Sample conservation
Tartaric stability Reader	A-2016 Magic+ Checkstab		1		
Portable gas analyzer – O ₂ and CO ₂	Dansensor Checkmate 9000		1		
Spectrophotometer Pc Spectro	Lovibond		1		Measurements of D-glucose and D-fructose
Fridge -10°C a -20°C			2		

1.26				
HPLC-UV Ultimate 3000	Dionex		1	Separation and identification of polar compounds
Pump Ultimate 3000			1	
Autosampler Ultimate 3000			1	
Column compartment Ultimate 3000			1	
DAD Ultimate 3000			1	
Dumas Nitrogen Analyser	Velpa		1	Nitrogen and protein quantification
GC-FID 7890 A + autosampler 7693	Agilent Technologies		1	Separation and identification of fatty acids
GC-FID-MS	Thermo Scientific		1	Separation and identification of lipophilic compounds and volatiles
HPLC-DAD	Vanquish, Thermo Scientific		1	Separation and identification of polar compounds
RI Detetor	Refractomax 520, ERC			Separation and identification of sugars

	NMR mq20 Analyzer	The minispec, Bruker		Fat and protein quantification
1.29	Fridge (Profª Suzana Ferrera Dias)	Philips		Sample conservation
	Fridge (Profª Suzana Ferrera Dias)	Fagor		Sample conservation
	Fridge	Whirlpool		Sample conservation
	Fridge -20 °C (Profª Margarida Moldão)	Ilsa		Sample conservation
	Fridge	Beko		Reagents storage/conservation
	Fridge (Profª Suzana Ferrera Dias)	Samsung		Sample conservation
	Fridge	AEG		Sample conservation
	Fridge -20 °C (Profª Anabela Raymundo)	Hisense		Sample conservation
	Chamber (Enologia)			Sample conservation
	Chamber (Profª Anabela Raymundo)			Sample conservation
	Chamber (Tropicais)			Sample conservation
	Fridge -10 a -20 °C	Simil, Hisense	4	Sample conservation
	Spray Dryer	Lab Plant	1	Liquid and suspension dryer
	Chamber -80 °C		2	Sample conservation

**Laboratório de
Reologia (1.30)**

	Stability meter	LUMIiREADER PSA Separation Analyzer		Particle stability measurements
	Rheometer	Mars III, Thermo Scientific		Measurements of rheologic properties
	Rheometer	Rheometer HR10 Discovery		Measurements of rheologic properties
	Water activity meter	LabMaster-aw, Novasina		measure the unbound water vapor pressures to determine microbial spoilage, chemical and physical stability
	Laser scattering particle size distribution analyzer	Partica LA-960V2, Horiba Scientific		
	HOMOGENIZOR IKA T25 DIGITAL	ULTA-TURRAX, IKA		Sample homogenization
	Texturometer	TA.XT Plus Texture Analyzer, StableMicroSystems		Texture analyzer
	Texturometer	TA.XT PlusC Texture Analyzer, StableMicroSystems		Texture analyzer

Piso 2

2.27

	Eletrospinning			
	Desumidificador	Kunft KDH8861		

**Lab Produtos cárneos
(Lab 2.9)**

	Liophilizer	ZIRBUS VACO 2-E		
	Hybrid vacuum pump	VACUUBRAND RC6		
	Meat and fish smoker FM2-70	FM2-70, Politec		
	Mixer	AMM-35S, AK- Ramon	1	To mix meat, meat analogues, fish among other food matrixes
	Mincer	SC-163 Star, AK- Ramon	1	To produce filler products

Picadora	P-22, AK-Ramon
Cutter	A-20 Var, AK-Ramon
Bimby food processor	Bimby TM6, Vorwerk
Fridge	Kunft

Laboratório Pais Azevedo

Lab			
Fiber analyzer			
Lab water bath	GRANT INSTRUMENTS OLS26	1	
Muffle furnace	NABERTHERM 24L		Incineration of solid samples
Oven	MEMMERT		
Sala das Arcas			
Fridge		3	Sample conservation
Fridge		2	Sample and solution conservation
SES			
Liophilizer			
Sala dos Moinhos			
Centrifugal mill			
Sala 8			
Centrifuge	CENTRIC 250 + ANGEL ROTOR RA6/50 CENTRIC DOMEL		
Scale	ME104T00, METTLER TOLEDO		
Sala 6			
Colorimeter	NIX PRO 2 COLOR SENSOR MS		
Soxtec – hidrolisis unit			
Soxtec – extraction unit			
Spectrophotometer			
Viscometer	Ametek Brookfield		
NIRS			
Fibertec	Foss Analytical	1	Fiber measurements
Oven		3	
Refrigerated oven		1	
Heating plate			
Heating plate			
Ultrasound bath with temperature			
Water destiller			
Water bath		2	
Scale			
Scale (1-8kg)			
Calorimeter			
Potenciometer			
Kjeldahl Digestor			
Liophilizer			
Bench mill			

Mill			
Polarimeter			
Vórtex		4	
Gel Doc.			
Eletrphoresis	Multiscan		
Spectrophotometer	myspec		
Termociclador			
Centrifuge			
Homogenizer	Thermalshaker		
Orbital shaker			

Herbário João de Carvalho e Vasconcellos

A3 Scanner	Epson Expression 1100 XL
Scanner	eScan I2S DigiBook
Stereo microscope with digital camera	Leica S9 i

Edifício Principal

s/ local	Gene Pulser Xcell Total Sistem Fluorometer with pulse light	Bio-Rad	1	O ₂ and N ₂ meaurments
Lab 34	Microscope	MODULO ICC50 W LEICA		
P0-54	Liophilizer			Desidratação de amostras
Sala 0.16	photometer	PF-12 PLUS MACHEREY-NAGEL	1	mobile water analysis
Sala 0.53	Portable biogás analyzer	GEOTECH	1	
1.45b	Microscope AXIO			Cellular structure analysis
LAB 10	Autosampler SKALAR Carbon and Sulphur analyzer ICP-OES GC Block Digestion System Ultrapure water system 6400 Automatic Isoperibol Calorimeter	SCP, Science μ Water Parr 6400	1	Quantification of S and C Mineral composition Volatile composition
Lab Horticultura	Real-time PCR ref. 90279050 Refratometer	Marca/Modelo: Thermo Scientific - Piko Kit ATAGO	1	Detection of genes Brix measurement and acidity
Patologia Lab Micologia	Fridge			

	Flow cytometry			Counting and analysis of particles suspended in fluids
	Capta-esporos portátil (Amostrador de ar para placas Petri)	Avantor/VWR		
Genética				
	Germination chamber			Seed germination
	Microscope camera	MODULO ICC50 W LEICA		
	Vacum pump	KNF		
Fisiologia vegetal				
	liophilyzer			liophilyzation
	Portable Real PCR	Marca/Modelo: Thermo Scientific - Piko	1	Detection of genes
	Ultra-centrifuge fridge	Ultra LAB		Separation of components
	fridge	Whirlpool UW8 F2D WHBI	1	Sample preservation
	Porometer/Fluorometer	LI-600PF		
	Mixer mil	RETSCH MM 400		
	Centrifuge	Beckman Avanti JXN-26		Separation of components
Laboratório Pedologia e geoquímica				
	Scale	Agimatic	1	Sample scale
	Potenciometer	Mettler AE163	1	
		Metrohm 712	2	
		WTW pH3110 set 2	1	
	Molecular Sieves	Sintx 41		
	Tensiometer	Fritsch	1	
		ILT-600 0-40 AZUL	1	
Botânica				
	Multi-Parameter Meter (pH/Conductivity/DO)	PHENOMENAL	1	
	Food processor	MOULINEX		
	Fridge	528L VIP		
Adega				
	Red wine fermentation tanks 5000 Lt			Fermentation
	Destemmer/crusher	Mod. NCD 8		Destemmer/crusher
	Temperature controller			Equipment to control temperature
	Pneumatic Press			Pressing
Horto química agrícola				
	Weather station		1	
	Laboratory Climatic Chamber		1	
Pavilhão anexo Eng. Rural				
	Manometry unit	LT Tecra Toshiba R840		
Pavilhão recursos genéticos				
	Autoclave		2	

Lab. 1.52

	Fridge	EUROFRED	1	
Sala 1.36	Kit apple acidity meter	Atago		
Lab. 17.A	Laboratory water bath	12L, 110°C, SELECTA		
Viveiros Florestais				
Viveiros, P0 – Lab 2	Hypsometer	Vertex IV (com Bluetooth)	2	
	Telescopic stick		2	
	Chainsaw	STIHL MS211	1	
	Brushcutter	STIHL FS410 C-EM CABEÇA AUTOCUT 46-2	1	
Vacaria				
Sala de apoio	Vertical Fridge	LIEBHERR GTP 4656	1	
			1	
Zootecnia				
Setor Experimental			1	
	Scale	BBA231-3A15A METTLER TOLEDO		
	Poultry Plucker 50			
	Poultry Scalding	ES70L		
	Scale	ICS425s		
	Platform scale	PBD655-A12		
Secção de produção animal	Fan	Multifan		
	Nix sensor color			
	Coffee mill	Princess	1	
	Vacuum machine	Tecnipeso, Modelo IPVAC-02 20M3/H	1	
	Meat grinder	Braun, Modelo - Minipimer MQ30	1	
	Drilling electrode	Metrohm		
	Heating plate	Nahita blue, Modelo 693		
	Oven	Memmert, Modelo UN 110		
	Water bath	Grant, Modelo OLS26		
	Colorimeter	Nix sensor, Modelo Nix Pro 2		
	Calorimeter	Parr 6400		
	Muffle	Nabertherm, Modelo LT24/11		
	Pig metabolic cages		24	Animal experimentation trials
	Pig parks		20	Animal experimentation trials
	Poultry metabolic cages		40	Animal experimentation trials
	Poultry parks		24	Animal experimentation trials

Rabbit metabolic cages	50	Animal experimentation trials
Rabbit fattening/breeding batteries	100	Animal experimentation trials
Digital incubator		Hatching eggs
Electric stun		Atordoamento no abate de animais
Fridge -20°C	4	Conservação de amostras
Fridge -80°C		Conservação de amostras
Scale (< 6 kg)	2	Weighing
Scale (< 150 kg)		Weighing

Chalé

Thermal imaging camera	FLIR ONE PRO USB-C
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Horto Química Agrícola

Pavilhão anexo Eng. Rural

Phytoclimate chamber

Controlo e homogenização das condições como humidade, temperatura, luz, pressão, CO₂

Pavilhão de Recursos Genéticos

Autoclave