

TABLE 1 LIST OF INSTRUMENTS/EQUIPMENTS FOR OLIVE QUALITY LAB & PHYTOSANITARY LAB

S. No	Name of Item	Specifications	Quantity*	Unit Price PKR**	Total Price PKR**	Delivery time in days***
1	Analytical balance	Key Future: Tare function, auto zero tracking, Piece counting function, hook for underbalance weighting, LCD display with white backlight, internal autocalibration. Technical: Capacity (g): 220 Pan size: 80mm Sensor: Magnetic Resolution (g): .0001 Stable time: ≤ 4 S Display: LCD Material: Aluminum Operation Temp: 5-25 C Repeatability: +-0.0002 g Linearity: +- 0.0003 g Complete with all accessories	1			
2	Technical balance	10 mg accuracy, Capacity 2200g; Readability 0.01g, response time <2s Feature: High-resolution load cell weighing system Automatic internal calibration LCD with backlight	1			
3	Fume Hood	Exhaust air linear velocity ≥ 0.41m/s with 35 cm front panel open, Suitable for connection to an exhaust system, complies with EN ISO 14175 3-6, Chemical resistant ceramic work surface, minimum Useful dimensions (WxHxD, mm) 1180 x 1200 x 750 Equipped with minimum 3 sockets Fume Hood Acid Resistance CE certified Complete system ready to Use.	1			
4	Micropipette adjustable volume 1000 µL with tips	Adjustable volume from 10 to 1000 µL with 1 µL steps Conforms with ISO 8655 Operating conditions > Temperature: 5 °C – 40 °C > Humidity: 10 % – 95 %	2			
6	Micropipette adjustable volume (20-200 µL with tips)	Adjustable volume from 1 to 200 µL with 0.1 µL steps Conforms with ISO 8655 Operating conditions > Temperature: 5 °C – 40 °C > Humidity: 10 % – 95 %	2			
6	Magnetic stirrer with Hot Plate	Adjustable speed 0-1500 rpm, Epoxy Painted Aluminum Structure with heating plate of diameter better than 150 mm Having stainless steel ceramic coated plate, CE compliant, 50-320 °C temp. range, Voltage (AC Supply):220 volt /50 Hz Power: 600 Watt	3			
7	Water purification system (water HPLC grade)	Able to produce type I ultrapure water, Resistivity ≥18.2 MΩ.cm at 25°C, Dispense flow rate >1L/min Resistivity at 25 °C18.2 MΩ.cm Total Organic Carbon (TOC)≤ 5 ppb Particles: No particles with size > 0.22 µm Temperature5 – 35 °C / 41 – 95 °F Complete along with all accessories	1			
8	UV/VIS Spectrophotometer	Double Beam with fixed spectral resolution, long term stability, excellent single-to-noise ratio and best energy throughput. Holmium oxide filter for automatic wavelength calibration. Quartz quoted optics. Wavelength range 190 - 1100 nm, scan speed UV-Vis >20,000 nm/min, Spectral Bandwidth UV-Vis < 1 nm, double beam, controlled by PC (software included) Mode: Absorbance/Transmittance and wavelength scan mode Voltage 220V Complete along with all accessories including quartz cuvettes	1			
9	Thermostatic Oven 105°C	Temperature range: RT + 5°C to 250°C, temperature resolution 0.1°K, temperature stability 0.5°K, Capacity >100 L, electronically adjustable ventilation Complete along with all accessories Display: Analog Voltage 220V Warranty: 3-years warranty after installation	1			
10	Diaphragm vacuum pumps	Pump rate >20 L/min, max vacuum <20mbar, PPS pump head PTFE-coated diaphragm FFPM valves Complete with all accessories Voltage 220V	1			
11	Ultrasonic thermostatic bath	37 kHz ultrasonic frequency, temperature control from 25 to 80°C with 5°C steps, 5 L capacity. Material: Stainless Steel Display: Digital Voltage:220 V Complete with all accessories	1			
12	Refrigerated centrifuge with rotor for Eppendorf, falcon15mL, falcon 50mL	Temperature range -10°C to +40°C, equipped with rotor suitable for 1.5, 15 and 50mL centrifuge tubes, max RCF with rotor for 1.5mL tubes >20000 RCF, >8000RCF with rotor for 50mL tubes. Along with accessories and requirements	1			

13	Vortex Mixer	Digital Vortex Mixer Adjustable Speed 200-3000 or above rpm Certifications/Compliance: CE, Certificate Analysis (COA) Speed Accuracy: $\pm 5\%$ rpm Control Digital or Knob, speed adjustable Stable for long-term operations Warranty :2 Years Voltage 220V Along with all accessories	2		
14	Thermostated Bath (100°C)	Temperature control from 25 to 100°C, with 0.1°C stems, Temperature stability of ± 0.5 °C Controller Type: Digital Temperature Stability ± 0.1 °C Temperature Uniformity ± 0.05 °C Certifications/Compliance: CE Voltage 220V Temperature Range: Ambient +5° to 100°C	1		
15	Rotary evaporation system	Evaporator system composed by: 1.Rotary evaporator, a.Speed range 5 - 280 rpm b.Evaporating flasks: 1000ml c.Collecting flasks: 1000ml d.immersion angle adjustable 10-50° 2.Heating bath with a capacity of 2.5L or higher a.heating temperature range of RT to 99 °C 3.Recirculating chiller, a.Adjustable temperature range -5 °C to +20 °C b.Tank capacity 3L c.Flow rate ≥ 2 L/min 4.Controller of vacuum level. a.Regulation range 0-1100mbar b. Accuracy ± 5 mbar 5.Double stage membrane vacuum pump, a.Chemically resistant PTFE diaphragm b.Final vacuum ≤ 5 mbar c.Suction capacity ≥ 1.5 m ³ /h 6.Complete with all accessories For all components Power supply 220V/50Hz	1		
16	Ultraviolet lamp having a wavelength of 366 or/and 254 nm;	UV lamp with support, useful wavelength 366 and 254, for TLC plate reading	1		
17	Furnace	Temperature range 100-1100 °C, capacity>5L, stability ± 2 °C at 1000°C, electronic control of temperature, Digital single program with minimum 2 segments, Additional Dwell Timer, Delay Timer Complete with all accessories	1		
18	SPE vacuum disposable	☑Vacuum disposable chamber for SPE, ☑Suitable to perform more than 12 sample extractions simultaneously. ☑Complete with all accessories ☑Vacuum-tight glass chamber ☑Polypropylene lid with gasket ☑Vacuum gauge assembly	1		
19	HPLC system with PDA detector	☑Reversed phase HPLC system composed by: ☑Reversed phase quaternary pump with degasser, low pressure mixer, precision gradient maker, •max operating pressure ≥ 600 Bar, •flow range 0,001-5 mL/min; ☑ Liquid auto sampler with loop of variable volume 1 to 50 μ L, • Sample vials capacity more than 40 position, • Temperature control 4-40°C; ☑Column compartment able to contain two HPLC columns of 25cm of length; • Temperature control from 5 to 110°C, • stability ± 1 °C; ☑PDA detector able to work with acquisition rate >50Hz for both signals and spectra, short-term noise <4x10-6AU at 230nm with slit width 4nm • absorbance between 200 and 800nm, • more than 4 signal simultaneously and 3D, • max absorbance >2.5 AU, flow cell with 10mm path length, • flow cell max pressure >5 Bar, flow cell volume from 2 to 13 μ L; ☑PC workstation with software for the acquisition method, data elaboration and quantitative application, software compatible with Office applications for rapid data exportation and report elaboration. ☑Metallic connection tubes with simplified system of connection and reduced void volume, ☑UPS true online 8 KVA or back up is required Complete with all along necessities	1		

20	Gas chromatographer equipped with SSL injector, FID detector and PC interface	<p>GC system made of:</p> <ul style="list-style-type: none"> Split-splitless injector, <ul style="list-style-type: none"> Split ratio from splitless to 1:100, electronic control of the Split valves, temperature control from RT to 380°C, max pressure >110psi, electronic control of pressure, working condition at constant flow or linear velocity, compatible with capillary column with diameter ranging from 0,32 to 0,1mm. Column oven, <ul style="list-style-type: none"> max temperature >400°C, max temperature ramp>50°C/min, Oven Cool Down from 300 °C to 50 °C in <7minutes. Flame ionization detector with electronic control of air and hydrogen gas flow, <ul style="list-style-type: none"> auto zero, max temperature >400°C, acquisition rate >50Hz. PC interface and software for system management, data acquisition, quantitative data analysis and report. Complete with all accessories and requirements. 3 years' warranty after installation 3 hours online UPS is required 	1			
21	Hydrogen generator	<p>> 700 cc/min of Hydrogen with purity better than 99.9999% pressure up to 10 bar (145 psi), human interface for the instrument control, maintenance, diagnosis with water level and purity control. Complete with accessories and requirements</p>	1			
22	Air Zero generator	<p>Able to remove the total hydrocarbons to less than 0.06 ppm from the external compressed Air, able to purify up to 30 L/min of compressed Air and can bear a pressure up to 7 bar (101.5 psi).</p>	1			
23	Nitrogen Generator	<p>up to 600 cc/min of Nitrogen with purity better than 99.99999% pressure up to 16 bar (232 psi) 3 years' warranty after installation Including all accessories</p>	1			
24	HPLC column	<p>C18 HPLC column 150 mm x 3 mm 3µ particle size, end capped HPLC Column Ascentis C18 L x I.D. 15 cm x 2.1 mm, 3µm particle size, or equivalent with carbon load >15% NP-HPLC column ZORBAX Rx-Sil 3mm ID x 100mm L, 1.8µm particle size, or equivalent</p>	1 each			
25	GC column	<p>DB5-HT 15m of length, 0.25 id, 0.1 film thickness or equivalent Supelco-SPBTB-5; 30 m x 0.25 mm i.e. x 0.25 µm film thickness or equivalent Fast FAME 20 m, 0.18 mm, 0.20 µm</p>	1 each			
26	Electrophoresis apparatus (horizontal or capillary)	<p>Unit Dimensions (cm): 17.5 x 26.5 Maximum Sample Capacity: 210 Base Buffer Volume: 500 mL Buffer Recirculation: Requires MS15LIDBP Flexicaster Options: MS15/20-FC, MS26-FC Typical Running Conditions: 90-150V, 60-90 minutes Bromophenol Blue Migration Rate: ~4-7cm/h at 90-150V Gel Dimensions: 15 x 15cm Run up to 210 samples Low buffer volumes Multichannel pipette compatible combs for speed loading</p>	3			
27	Safety cabinets for storing chemicals (acids/bases, flammable, corrosive, etc.)	<p>Safe and approved storage of aggressive, nonflammable hazardous materials in working areas. Acid Safety cabinet Material: 18 Ga CR Steel Dimensions: Exterior:43" W x 44" H x 18" D Interior: 39.5" W x 39.625" H x 14.562" D</p>	4			
28	Autoclave	<p>VERTICAL Chamber Dimensions ØxD (mm): 280 x 460 Chamber Volume (Liter): 31 External Dimensions WxHxD (mm): 540 x 980 x 440 or better 23 LT/ 35 LT, Including all accessories and requirements</p>	3			
29	Thermblock	<p>Temperature °C 25 ± 200 Precision ± 0.5 Heating power W 300 External dimensions mm 305x230x110 Protection class IP 40 Working temperature °C +5 amb ± 200</p>	3			
30	Laminar flow hood	<p>Certifications/Compliance EN 12469, by TÜV Nord, LNE (0.9 and 1.2m). EN 12469, by TÜV Nord (1.5 and 1.8m) Width (Metric) Interior1.8 m Product Type Biosafety Cabinet Noise Level<59 dBA Receptacles2 Double, Left and Right Side Width (English) Exterior74.8 in or better Exhaust Air Filter HEPA H 14 EN 1822, 99.995% at 0.3µm Particle Green Features Energy efficient Width (Metric) Exterior190 cm or better Width (English) Interior6 ft. or better Height (Metric) Exterior152 cm Depth (Metric) Exterior80 cm Including all accessories and 3 years warranty after installation</p>	3			

31	Centrifuge	<p>Standard rotor for up to 24 x 1.5- and 2.0-ml tube Rotor option for up to 32 x 0.2 mL PCR tubes or 4 x 8-place PCR strips include a second rotor is better Adapters for 0.2, 0.4- and 0.5-ml tubes as well as 0.6 ml BD Microtainer Soft-touch one-finger lid closure for ergonomic lid locking Automatic lid opening at the end of the run to prevent sample warming and to allow easy access to samples High quality anodized aluminum rotors and rotor lids One push short-spin key for quick centrifugation - no need to hold key all the while Easy to clean keypad control panel Particularly small footprint to save precious space on the lab bench: 24 x 35 x 22 cm / 9,4 x 13,8 x 8,7 in (W x D x H) Max. speed: 21,300 x g (15,060 rpm) Along with all complete accessories 3 years warranty after installation</p>	3			
32	Freezers-20°C	<p>vertical or horizontal One-piece structure with stainless steel cabinet inside. 3 or more adjustable shelves. Adjustable feet, magnetic gasket and key lock. Internal LED illumination . Ventilated refrigeration with automatic defrost. LED display equipped with max/min temperature and open-door alarm.</p>	3			
33	Centrifuge-80°C	<p>vertical or horizontal highly insulated structure (average thickness 140mm) on wheels with AISI 304 stainless steel internal cabinet and shelves. Inner counter doors insulated with triple silicon rubber gasket, N.2 ergonomic handles and key lock. Double stage refrigeration system with independent cascade (N.4 hermetic silent compressors + 2 evaporators) and air condenser. Alternated function with automatic control. Equipped with an LCD alphanumeric display.</p>	3			
34	Liquid nitrogen container	<p>35L very small Liquid nitrogen container 35.5 liter Neck diameter:125mm External: Diameter 473mm, high 690mm Loss mass:0.29liter/day Static holding time:123 days Canister size: dia.97mm, high 120/276mm Number of canes:198 Number of vials:990 Numbers of canisters:6 Canister outer diameter:97 mm Static holding time:123 d High-strength aluminum alloy structure, light empty weight. Hinged handle, portable. Encoding canisters, for easy recognition and convenient accessing of samples. Protecting jacket, portable and preventing collision. Complete with all accessories</p>	3			
35	0-25C	<p>Direct Cool Refrigerator with separate compartments. European Standard A++ Energy Rating. Super Wide Voltage Working (120V to 280V). Works on UPS, Generator Properly Open evaporator for 6-way cooling. 3-Sided Condenser. Capacity 333 L OR above. Energy efficient and environment friendly.</p>	3			
36	Refrigerators (+4°C)	<p>One-piece structure with stainless steel cabinet inside. Adjustable feet. Magnetic gasket and key lock. adjustable shelves Internal LED illumination. Ventilated refrigeration with automatic defrost. Led display with min/max temperature and open-door alarm Complete with all accessories</p>	3			
37	Cold storage room (+4°C)	<p>Medium size Complete with all accessories and requirements</p>				
38	Thermostatic incubator (0-50°C)	<p>Chamber Capacity [L]: 56 Working Capacity [L]: 56 PID Microprocessor Display: 4.3" Color Touch Screen Temperature Range [°C]: 5°C above ambient temperature ... +100°C Temperature Resolution [°C]: 0.1 Temperature Fluctuation at 37°C [±°C]: 0.2 Temperature Variation at 37°C [±°C]: 0.7 Complete with all accessories</p>	3			

39	ELISA plate reader	Should have minimum wavelength range of 400–750 nm and photometric range of 0.0–3.5 OD Should have linearity of $\leq 1.0\%$ from 0.0–2.0 OD; $\leq 2.0\%$ from 0.0–3.0 OD; accuracy of $\leq 1.0\%$ or 0.010 from 0.000–3.000 OD at 490 nm; precision of 1.0% or 0.005 OD from 0.0–2.0 OD; 1.5% from 2.0–3.0 OD and resolution of 0.001 OD Should have minimum 8 filter wheel capacity with 415, 450, 490, 595, 655, and 750 nm included filters Should have minimum 3 speed plate shaking with adjustable duration of 0–999 sec. Read time should not be more than 6 secs at single wavelength or 10 sec at dual wavelengths Should have onboard graphical thermal printer and USB2 interface with PC or Mac data stations for data output Should be able to store data for over sixty assay protocols System should come with a comprehensive software package allowing colorimetric and turbidimetric analyses, as well as report analysis for raw data, absorbance, limit, matrix, normalization, and curve fit Software should have the functionality of flexible template creation for any microplate format up to 1,536 wells Software should be either license free or license for minimum 5 systems should be provided Complete with all accessories	3			
40	Micropipettes and volumetric dispensers	Set different volume P1, P2, P5, P20, P200, P1000, PIPETMAN P2: 0.2-2 μ L PIPETMAN P10: 1-10 μ L PIPETMAN P20: 2-20 μ L PIPETMAN P100: 10-100 μ L PIPETMAN P200: 20-200 μ L PIPETMAN P1000: 100-1000 μ L GILSON or equivalent having good quality complete with all accessories	3			
41	Optical microscope	having 40X, 100X e 400X, Magnification up to 1000x, Reflected Light Illuminator with Cutting-edge LED Illumination, Better with camera or connected by pc Complete with accessories	3			
42	Homogenizer for sample preparation	Speed range 10000-30000 rpm Rotor speed 22.7-36 m/sec Speed Setting 6 speeds Range 100ml-5000ml Max viscosity 10000 mPas Material stainless steel PTEE Dimensions 70mmx70mmx255mm Operating Environment 0-40°C, Protection class IP2 Complete with all accessories	4			
43	Digital pH meter	pH – range: -2,000...+20,000 pH – resolution: 0.1/0.01/0.001 (selectable) pH – accuracy: $\pm 0.1 / \pm 0.01 / \pm 0.005$ pH – calibration: Up to 5 points included buffer standard solution having ph 2,3,5,6,7,10,14, Power with universal AC adapter or AA Batteries Temp compensation: Auto/Manual Complete with all accessories	4			
44	Ice maker	Stainless steel body with curve door. One piece supporting structure foamed with polyurethane resins. Hermetic compressor and HFC refrigerant. Functioning lights and water supply lack signal. Safety thermostat. Air or water condensation option. Complete with all accessories	3			
45	Stainless steel sieves (various sizes)	FOR NEMATODE LAB Material: stainless steel Height: full or half height	3			
46	Stereomicroscope	Optical equipment having 10x wide-field eyepieces 1x and 3x objectives 10x and 30x magnification Illumination: LED incident and transmitted Having adjustable eye distance Complete with all accessories and requirements 3 years warranty after installation	3			
47	Sterilization oven	Temperature range: RT + 5°C to 300°C Capacity >100 L electronically adjustable ventilation Along with all complete accessories and requirements	3			
48	Thermocycler	Thermal Accuracy $\pm 0.25^\circ\text{C}$ (35°C to 99.9°C) 96-well 3 Zones Veri Flex (or divided in two parts Along with accessories and requirement	3			
49	Laboratory Oven	Working chamber dimension WxDxH: 600*500*750 temperature resolution 0.1°K, about 300 °C or better Microprocessor based temperature controller Over temperature safety controller Uniform temperature distribution across chamber Stainless steel inner chamber Optimized insulation minimizes heat loss Motor driven blower unit Tubular air heating element Fume exhaust holes Including all accessories and requirement	4			
Total price						0

Notes: This is a market analysis exercise, not a purchase bid
Quantity* Estimated quantity for project duration.
Unit and Total price in PKR** Indicative price should be valid for 12 months. Specific quotations will be requested during purchase exercise
Delivery time in day *** Max duration to deliver equipments starting from confirmed order to the lab in Islamabad, Punjab, KPK or Balochistan.