



भाकृअनुप - केन्द्रीय रोपण फसल अनुसंधान संस्थान
कासरगोड, केरल - 671 124 भारत
ICAR - Central Plantation Crops Research Institute
Kasaragod - 671 124, Kerala, India
ICAR (ISO 9001:2008 Certified Institution)



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No.40(2)36/2017-Estate

Dated: 14.12.2017

Shri Manoharan B
Ashok Nivas
Ballier, Post Kudlu
Kasaragod 6761 124.

Sub: Contractual work at CPCRI, Kasaragod – regarding.
Ref: Your quotation dated.15.11.2017

Sir,

With reference to your quotation cited above, order is hereby placed for executing the following contract work at CPCRI Kasaragod as detailed below.

Item No	Description of work	Approximate Quantity	Rate (Rs.)	Amount (Rs.)
1	Laboratory (Genetics) Lab equipment handling for lab based analysis of the coconut experimental samples viz. oil estimation approximately 20), tender nut water (approximately 10), as directed, including preparation of reagents, standards, collection and fixing tissue samples, processing of tissues and preparation of blocks, preparation of samples and other lab related works as directed.	Oil estimation (approximately 20) Tender nut water (approximately 10) M.Sc., degree in Agri/Hort/Biochemistry/Biotechnology/Botany/Applied Botany/Bioscience (entire work)	11,700/- Per month	11,700.00
2	(Biotechnology) Washing glass wares including removal of media from the tubes, soaking in soap solution overnight and washing	10,000 test tubes 1000 conical flasks 2000 petri dishes 200 measuring cylinders 700 reagent bottles 100 small vials		
	Cotton plug preparation Autoclaving	6000 plugs 600 L of media, 200 L of buffer solution. 10 Kg potting mixture, 5500 eppendoff tubes, PCR tips 750 L of sterile water	22,000/- Per month Per two person	22,000.00
3	Culture media preparation for coconut and arecanut tissue culture	2000 litre	11,700/- Per month (entire work)	11,700.00
	Stock preparation for media for coconut and arecanut tissue culture	100 litre		
	Hormone stock preparation for coconut and arecanut tissue culture	10 litre		
	Preparation of samples for sterile culture initiation	10,000		
	Inoculation of sample to initial media for coconut and arecanut tissue culture	10,000 samples		
	Sub-culturing of sample to another media for coconut and arecanut tissue culture	20,000 samples		
	Pouring media into tubes /conical flasks	20,000		
	Sealing and storage of media in appropriate places.	20,000		
4	Preparation of buffers/reagent	100 liters	11,700/- Per month Entire work	11,700.00
	Grinding of samples and extraction of DNA/RNA	1000		

	Preparing agarose gels for checking DNA/RNA quality	100		
	Preparation of PCR reaction mix and running PCR in thermocycler	5000		
	Operating AUTOMATED ELECTROPHORESIS UNIT and REAL TIME PCR THERMOCYCLER	100		
	Documentation of results and scoring of bands	5000		
6	Washing of laboratory glass wares, drying and stocking in the respective place, and cleaning the laboratories	On daily basis:- 300 nos glass wares, work tables-6nos	11,000/- Per month (entire work)	11,000.00
7	(Microbiology) a)Earthworm multiplication – Chopping coconut leaves, bed preparation, Transporting cow dung, watering the beds, counting, Sieving and supplying earthworms and vermicompost to farmers and clients.	300 kg leaf wastes 250 kg bunch waste 300 kg cow dung 200 kg vermicompost 200 kg coir pith compost	13,125/- Per month (entire work)	13,125.00
8	Glassware cleaning, soil sample collection, lab cleaning, drying samples etc.	More than 200 soil and other samples for microbial analysis, 20-30 l media/reagents weekly, Decontamination of 500 nos. of glasswares monthly, More than 50 kg of talc/carrier material for bioinoculant formulation.	(entire work) 11,000/- Per month	11,000.00
9	(Division of Crop Protection) Production of <i>Trichoderma</i> formulations (Pathology) <ul style="list-style-type: none"> Maintenance of <i>Trichoderma</i> nucleus cultures in the lab and sub-culturing regularly (once in 15 days). Mass culturing of <i>Trichoderma</i> spp. for preparation of <i>Trichoderma</i> formulations viz. <i>Trichoderma</i> talc and <i>Trichoderma</i> coir pith cake. Packing the talc powder in 2 kg capacity heat resistant polythene bags and sealing the bags. Sterilization of the talc powder in autoclave. Mixing the <i>Trichoderma</i> culture with talc powder. Shade drying the formulation for 3-5 days. Packing in polythene bags of required quantity and sealing the bags. Packing good quality coir pith in heat resistant polythene bags and sealing the bags. Sterilization of coir pith Mixing the <i>Trichoderma</i> culture with coir pith. Preparing the <i>Trichoderma</i> cake. Drying the cake in hot air oven, packing and sealing. Powdering and sterilization of Neem Cake. Mass production <i>Trichoderma</i> using sterized neem cake substrate.	Entire work	11,700/- Per moth	11,700.00
10	Maintenance & Multiplication of insect cultures including parasitoids (<i>Barcon brevicornis</i> and <i>Goneozus nephantidis</i>) (Entomology) <ul style="list-style-type: none"> Rearing of <i>Corcyra</i> larvae on broken wheat grains and transferring the larvae in to small test tubes for inoculation - 200 larvae/ day @ 30 paise/larvae Transferring emerged parasitoids in to bigger test tubes in aseptic 	Entire work	11,250/- Per month	11,250.00

	<p>condition and monitor the growth stage of the parasitoids includes; preparation of cotton plug and wax paper strips and fed the insects with honey - 1000-1200 parasitoids daily@ 30 paise per parasitoids.</p> <ul style="list-style-type: none"> • Autoclaving used culture tubes, cleaning with soap solution drying and sterilizing in the oven - 200 small tubes 20 big tubes (weekly twice) • Field collection of leaf eating caterpillar as and when incidence is reported and laboratory maintenance • Field collection and maintenance of white grub cultures in the lab, cleaning and sterilizing of containers and filling with sterilized soil. • Field collection of red palm weevil and rhinoceros beetles. Laboratory rearing of beetles by frequently providing coconut petioles. • Collection of rhinoceros grubs and maintenance in laboratory <p>Sterilization of laboratory equipments, preparation of fungal/ bacterial culture media for the multiplication of microbial biocontrol agents.</p>			
11	<p>Mass rearing of Greater wax moth, <i>Galleria mellonella</i> and mass production of entomopathogenic nematodes (Nematology)</p> <ul style="list-style-type: none"> • Collection of honey combs and separation of <i>Galleria</i> larvae from bee hives maintaining by farmers at different places of Kasaragod. • Preparation of ingredients (maize, wheat, bran etc.,) requirement of artificial diet its cleaning, drying and grinding process of desirable required standard and proper ratio for the multiplication of <i>Galleria</i> larvae. • Preparation of artificial diet of 6 kg regularly at 20 days interval of 20 boxes for rearing different instar <i>Galleria</i> larvae for large scale production of EPN. This process will continue for throughout year. • Collection of pupa and separation of adult moth of <i>Galleria</i> and placing in separate cages regularly at 15 days interval for hatching of eggs it is regular work to maintain culture healthy and fresh. • Collection of eggs and keeping for larval hatching it is continuous process to avoid loss of culture. • Assisting in selection and counting of fully grown <i>Galleria</i> larvae for EPN inoculation, collection EPN infested <i>Galleria</i> cadavers and its drying for 2 days, preparation of white trap chamber for placing cadavers to harvest the infective juveniles at 24 hours interval for regularly. • Assisting in maintenance of hygiene in proper washing of all the devises using in multiplication of EPN at regular interval to avoid contamination • Preparation of EPN storage process and assisting in packing, storing and transportation of stored EPN vials pouches to experiments filed on root grub management in YLD affected and non YLD plots at Karnataka and Kerala. <p>Assisting in routine work of collection of soil samples and EPNs infected insect cadavers from trial plots and during survey work in different agro-climatic conditions of India for geomapping of EPN diversity.</p>	Entire work	11,250/- Per month	11,250.00
12	<ul style="list-style-type: none"> • Autoclaving disease samples and disposing them (3000 samples) • Autoclaving used culture tubes (with micro-organism culture), cleaning with soap solution, drying and sterilizing in oven (7500 samples) • Autoclaving used Petri dishes (with micro-organism culture), cleaning with soap solution, drying and sterilizing in oven (15000 petri plates) • Autoclaving used culture flasks (with micro-organism culture), cleaning with soap solution, drying and sterilizing in oven (7500 flasks) <p>(Entire work of all Sections of Crop Protection Division i.e., Pathology, Entomology & Nematology)</p>	Entire work	11,000/-	11,000.00
13	<ol style="list-style-type: none"> 1) Regular operation of SCADA in Open Top Chambers (PB & PHT) 2) Assisting in measurement of water potential, photosynthetic parameters, chlorophyll fluorescence of coconut & cocoa seedlings. 3) Daily measurement of soil moisture using soil moisture probe to maintain plants at defined stress level. 4) Assisting in estimation of shoot, root and total biomass in coconut seedlings under different moisture regime. 5) Cleaning & maintenance of Open Top Chambers (six numbers) 6) Measured quantity watering of seedlings in OTC and shade net (60 Nos.) daily, removal of weeds, cleaning the premises of OTCs etc. 7) Assisting in sample collection for analysis, data recording, etc. 8) Replacement of CO₂ gas cylinder at regular intervals. 	B.Sc. Botany/ Zoology/Life Science	11,700/- Per month Entire work	11,700.00
14	<p>Assisting in biochemical analysis coconut leaf samples of different treatments at regular intervals.</p> <ol style="list-style-type: none"> 1) Total phenol estimation, Total and Reducing Sugars, MDA content, Leaf chlorophyll content, Epicuticular wax content 2) Total soluble proteins along with protein profile under Poly-acrylamide 	Approx. 100 samples each time	Entire work	11,700.00

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