1.Isolation and characterization of phyto-constituents with pesticidal activity and development of botanical formulations from under- exploited tropical zingiberales (AMP-06-00-05-2017- ODL- KAU Plan)

2. Screening of underexploited medicinal plants for economic biomolecules (AMP-06-00-04-2017- ODL- KAU Plan)

3. Extraction and purification of antioxidant principles from selected medicinal plants (AMP-06-00-01-2016-ODL- KAU- Plan)

In addition to seven compounds namely, Acteoside, Isoacteoside, Artanemoside, Leucoseptoside A, Martynoside, Plantainoside and Luteolin-7-O-rutinoside isolated and identified from anti-inflammatory, antioxidant fraction of methanolic extracts earlier, additional four compounds namely, Oraposide/ Crenatoside/ Orobanchoside, 3”’-O-Acetylmartynoside, 2”’-O-Acetylmartynoside and Clerodenoside A were isolated from pooled column fractions F0, by preparative HPLC. The isolated peaks were subjected to NMR and MS analysis for its structure elucidation and based on the I D , 2 D 1H NMR (400 MHz) and 13C NMR (100 MHz) spectral data and HRMS, LC MS/ MS and in comparison with literature, the above compounds were identified.

4. Evaluation of antioxidant activity, cytotoxicity and phenol composition of selected anti-inflammatory plants (AMP-06-00-02-2016-ODL- KAU- Plan)

In vitro screening against human pathogens: Sequential methanolic extracts of medicinal plants shortlisted through brine shrimp assay were screened against four human pathogens viz. Pseudomonas aeruginosa, Staphylococcus aureus, Klebsiella pneumonia and Escherichia coli by poison food method in appropriate medium and extracts with broad-spectrum activity against all the four tested micro-organisms were identified.
Screening against mosquito: In vitro screening of different crude powders and extracts of medicinal plants against mosquito larvae, pupae and adults of Aedes sp. was carried out. Some of the powders and extracts showed high activity. Formulations and dosages for sachet application were standardized for contained water application.

5. Evaluation of vetiver accessions for superior genotypes (AMP-01-00-01-2015- ODL- KAU Plan)

Acc. 7 for soil conservation: Acc.7 was identified as a vetiver type suitable as hedge plant for soil conservation. The accession was given for multilocational trial at ARS, Chalakudy, ARS, Mannuthy and AICRP (M&AP), Vellanikkara along with ODV -3, the existing released variety of vetiver. It is reported that Acc. 7 is non flowering and has better tillering and vegetative growth compared to ODV -3 at all the locations.
Evaluation of vetiver accessions for high root yield and oil yielding type: The selected accessions viz. ODV 7, 24, 27 and 33 were compared with ODV -3. Observations at 12th month showed that ODV-27 and ODV -33 produces higher root yield as compared to ODV -3.

6. Demonstration trial of vetiver accession in the coastal sandy tracts of Kerala: Selected accessions viz. Acc. 7, 24, 27 and 33 were planted in large area plots in the field of Sri Haneefa, Mannalamkunnu in comparison with the local type. Local type was infested with mealy bugs and hoppers in the early stages, whereas accessions from Odakkali were pest free. Out of the accessions tested, Ac 33 is best

in terms of farmer acceptance. Though yield is lower than local type, root is very long and fine with good aroma. Hence it is preferred for making handicraft items and hence fetches premium price. Acc. 33 is planted in larger area during December 2017 to confirm its adaptability and superiority.

7. Effect of nutrient priming of snake gourd seeds on germination and seedling vigour

Studies showed that nutrient priming with soluble fertilizer NPK 19:19:19 at concentrations 1-2% enhances germination and seedling vigour of snake gourd seeds.

Attachment	Size
concluded_projects_-_nov_2018.pdf	24.85 KB