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## Outlook of the KAU

The KAU is well poised to meet the challenges ahead. It provides the human resources, skills and technology for sustainable development of the state. Ensuring livelihood security of the dependent population in the specific context of Kerala's highly heterogeneous resource base and societal values, however, requires a paradigm shift from maximisation of production of specific commodities to the maximisation of income and employment on a sustainable basis and optimisation of the biophysical resource base for agricultural development. Hence research and extension would be reoriented towards a system approach for technology development and transmission aimed at alleviation of poverty and/or rural employment generation.

*KAU News  
wishes you  
a Happy  
New Year*

## Three decades of research, extension and education at KAU

The Kerala Agricultural University (KAU) was established on 24 February 1971, to give the much-needed impetus for agricultural development in the state through education and research. Establishment of an institution of higher learning in agriculture was thought to transform the State's traditional subsistence agricultural scenario, into a modern scientifically oriented production system. During the little over three decades of its existence, the University has strived to transform the agriculture sector of the state into an engine of its economic

growth. Although three decades do not constitute a long period in the history of an organisation, it is perhaps substantial enough to permit judgement of the initial performance. The following is a concise account of the University's achievements during this period.

### University's motto and its translation into a strategic action plan

The founding fathers perceived the University as an organisation for "providing human resources, skills and

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## Hybrid cashew varieties 'Raghav' and 'Damodar' released

Mr. V.V. Raghavan, M.P has stressed the need for developing high yielding hybrid layers of cashew which are resistant to diseases and pests. He was formally releasing two high yielding hybrid varieties of cashew christened as *Raghav* and *Damodar* developed by the scientists of Cashew Research Station (CRS), Madakkathara under the Kerala Agricultural University (KAU) at a *Kissan divas* organized to commemorate the birth centenary of Mr. Chaudhari Charan Singh, the former Prime Minister of India, at Madakkathara.

The continued and excessive use of

chemical pesticides and fungicides had caused irreparable damage to environment and human habitats. A number of Asian countries such as Vietnam and Indonesia had emerged as competitors in cashew export in international market along with India. Our farmers could face the competition in the global market only by adopting scientific cultivation practices with minimum and effective use of chemical pesticides, he said. Inaugurating the *Kissan divas* Mr. PP George, M.L.A, advised the farmers to get themselves prepared to meet the challenges of globalization

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## Three decades of research, extension and education at KAU (Contd. from page 1)

technology required for the sustainable development of Kerala's agriculture including crop production, animal husbandry, forestry and fishery by integrating education and research, by piloting their large-scale field adoption with supporting extension activities". Translation of this mandate into a strategic action plan, however, requires consideration of the state's natural resource base, the prevailing socio-economic environment, and the emerging challenges. A constant radiation surplus and a general thermic uniformity, besides high rainfall availability are characteristic features of the state, which permit diversified and continuous cropping over a net-cropped area of 24 lakh ha. Land use systems also present a complex pattern with a great diversity of trees and field crops. Cropping systems often include irregular intercropping and/or mixed cropping, sequential cropping and many other forms of polycultures involving wide spectrum of cereals, pulses, tubers, fruits, vegetables, latex and oil yielding trees and annual crops, beverages, condiments and spices, sugar crops, forages, medicinal plants, green manure crops and timber yielding species. Animal and fish production systems are also central to Kerala's economy. The small-holder farms of the state depend on livestock production for nutrition and income generation. In particular, people in the coastal tracts are dependent on fishery resources to eke out a living.

Yet, agriculture in the state is confronted with several problems. Low productivity of crops like rice, coconut, black pepper, cardamom, pulses and vegetables and low returns/profitability owing to market fluctuations/fall in the prices of coconut, rubber, arecanut etc., are perhaps the most important. Topographic peculiarities coupled with high rainfall intensities stimulate accelerated soil erosion; consequently many areas have become highly degraded. Poor input use efficiencies owing to high nutrient leaching and other forms of nutrient loss, high cost/non-availability of farm labour especially during peak seasons, low adoption of improved technology, inadequate linkages between research and development institutions, lack of organised marketing strategies and/or poor public policy support are other significant hassles in this respect.

### The overall impact of KAU technologies on the agricultural scenario of the state can be summarised as follows

- Developing sustainable agriculture production systems
- Eco-friendly technologies for crop pests, disease and weed control
- Production and distribution of quality planting materials
- Agroforestry, sustainable land use and climate change mitigation
- Conservation of biophysical resources
- Labour-saving and user-friendly tools/devices
- Capacity building and entrepreneurship development of farmers, youth, women and the under-privileged sections of the society.

Furthermore, indiscriminate use of natural resources is threatening ecosystem health in many parts of the state. Pressures from sophisticated technology and an ever-increasing human and livestock population will place greater and greater demands on these resources in future also. Increased social concerns for environmental values have given the agricultural and natural resource management professionals an additional task of managing the land to protect and enhance resources such as forests, wildlife, aesthetics, water quality, etc., besides shielding the humanity against the oddities of global climate change.

Although the challenges are daunting, especially in view of the abundant biophysical resources, physiographic heterogeneity, changing social fabric of the society and the mounting environmental concerns, the academic and research programmes of KAU have been designed to address these problems and the dilemmas of the twenty-first century, signified by globalisation, liberalisation and international competition.

### Academic excellence in the field of agriculture and allied sciences:

The challenges to agriculture and natural resource managers for more intensive management and more accurate predictions of environmental impacts are unprecedented in the

history of mankind and this has led to changes in agriculture and natural resource management education, the world-over. The KAU has been striving to fulfil its commitment by reorienting and restructuring its programmes. In bachelor's level education, professionalism has been fortified with entrepreneurship; and at the post graduate level, training imparted in emerging areas integrating relevant disciplines such as biotechnology, natural resource management, environment, intellectual property rights (IPR), biodiversity conservation, information technology, gender sensitisation etc. As a result, the University has been maintaining a steady position of excellence in agricultural education in the country. It topped the national list of honours during 2001-02 with 62 JRFs. In addition, it held the second position in 2000-01 and the fifth position during 1999-2000. Also, KAU has been ranked first in the Third Agricultural University Youth Festival (AGRIUNIFEST) organised at Thrissur, from January 19 to 25, 2002, in which 12 SAUs participated, implying its eminence in co-curricular activities too.

The mantra of this current era is "job placement." Career preparation is widely seen as the function of higher education. Several of the KAU alumni have gained entry into the civil service, agricultural research service/state departments/other services, besides commercial banks, NABARD etc. Furthermore, the Kerala Agricultural University has been instrumental in providing the intellectual foundation and training in scientific experimentation through its graduate and post-graduate programmes to a visible quantity of internationally known professionals and scientists in agriculture and allied fields.

### Location specific and problem oriented research:

The University implements appropriate research and technology development programmes in agriculture and allied fields so as to generate/transfer state-of-the-art technologies suited for improving the agricultural productivity of the state. Recognising the significance of location-specific research and the highly heterogeneous biophysical resource-base of the state,

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## Hybrid cashew varieties Raghav and Damodar released *(Contd. from page 1)*



*Shri V. V. Raghavan MP distributes cashew hybrids Raghav and Damodar*

without getting disappointed by the temporary set backs. The hybrid variety *Raghav* was obtained by the cross between the cashew cultivars ALGD-1-1 x K-30-1. The mean yield

recorded was 14.65 kg./tree/year. The nuts are bold with a mean weight of 9.2g. The export grade is W 210 with a kernel weight of 2.27g and shelling percentage of 26.6. The apple is golden yellow with 58.92 per cent juice.

*Damodar* was obtained by the cross between cashew cultivars Anakkayam-1 x H 3-13. The recorded mean yield of this variety was 13.65 kg./tree/year. The nuts are bold with a mean weight of 8.2 g. The export grade is W 240 and kernel weight 2g. The apple is light red in colour with 69.3 per cent juice. This variety was found apparently tolerant to tea mosquito bug. Shri. Sundaran Kunnathully, President, Madakkathara Panchayat presided over the function. Dr. A.I Jose, Director of Extension, KAU and Ms. PN Sulochana, Member, Madakkathara Panchayat spoke on the occasion. Dr. P. S. John welcomed the gathering. Shri. Venkitesh Hubballi., Dy. Director, Directorate of Cocoa and Cashew Development (D.C.C.D) proposed vote of thanks. The *Kissan divas* was organized under the joint auspices of the D.C.C.D and the KAU.

## Three decades of research, extension and education at KAU *(Contd. from page 2)*

the KAU research agenda have been organized into six agro-ecological zones and conducted in six Regional Agricultural Research Stations. For each of the given biophysical resource endowment, a system approach incorporating crop, livestock, forestry and fishery activities in resource use and management so as to maximise income on a sustainable basis, is pursued.

Over 700 research projects are currently in operation at KAU. This includes 54 All India Co-ordinated Research Projects/Network Projects and 20 NATP projects, four centres of excellence and one team of excellence, and several projects funded by agencies such as ICAR, ICFRE, DST, DBT, NWPR, MoEF, STEC, PPIC, DAE etc. The tools of biotechnology have been used for rapid multiplication of improved plant materials, secondary metabolite production and biodiversity conservation. Also, research undertaken in the University covers all economically important crops grown in the state with focus on rice, vegetables, banana, pineapple, pepper, coconut, cashew, cardamom, and medicinal and aromatic plants; animals (cattle, goats, pigs, elephants and poultry including ducks); fisheries; farm machines and implements; crop and animal production and management; agroforestry and farming systems. In that process it developed several improved varieties, farm practices and technologies which resulted in increased production/positive growth

rates, reduced cost of production and/or facilitated agricultural production in localities where biotic/abiotic constraints impeded production, leading to rising agricultural income of the state. Predictably, per hectare income from agriculture in Kerala has been the highest compared to other Indian States. In addition, the University has established close linkages with the NARS and International Agricultural Research Systems (IARS) in its academic and research endeavours.

Yet due to increasing anthropogenic pressures, the area under cropping in the state has been declining. For instance, paddy coverage has shrunk from 5.5 lakh ha in 1990-91 to just over 3.50 lakh ha in 1999-2000. Despite this, average rice productivity in the state has been increasing and it reached a peak (2203 kg ha<sup>-1</sup>) in 1999-2000.

### **Revitalise academic and extension activities by applying information technology in agriculture and allied field**

The rate of technological change is overwhelming. The half-life of knowledge is now about 5.5 years. New tools and increased access to information are altering the nature of organizations themselves, and nearly every aspect of society. In consonance with the technological changes, the University has established a network of teaching, research and extension institutions throughout the state, with state-of-the art facilities. Some recent

additions to infrastructure at various campuses and research stations include the Agricultural Research Information System (ARIS), Central Computer Lab under the aegis of the Fund for Infrastructure of Science and Technology Institutions (FIST) of the Department of Science and Technology (Government of India) at the Department of Silviculture and Agroforestry, Vellanikkara, Meat technology and carcass utilisation plant, electron microscopy unit, central auditorium and the like.

### **'Reaching the unreached'**

Programmes of the University in the area of extension are operationalised through a network of institutions consisting of five Krishi Vigyan Kendras, one in each of the major agro-ecological zones serving as the vanguard of the technology transfer commitment. Moreover, various training programmes are organized for updating the scientific knowledge and to improve the technical skill of the officers of different development departments. Training programmes are also being organized for farmers, unemployed youth, housewives and others in order to promote self-employment. The University provides news and materials to all types of media and brings out timely updates on the Package of Practices Recommendations for crops and livestock, with a view to bridge the technological gap.

*by K. V. Peter and B. Mohankumar*



# Gouri

## A new high yielding multiple resistant rice variety for Kuttanad



In Kuttanad, the coverage of high yielding varieties and realization of yield potential are already high when compared to the other rice growing tracts of the State. The yield potential of the tract also is very high which could not be realized fully due to several reasons, the most important one being the pest and disease problem of Kuttanad which is highly complex, characterised by the incidence of a multitude of destructive insects and diseases. Since weather conditions also influence the pattern of seasonal incidence of pests and diseases, especially during the Punja season, the pest and disease problem attains serious proportion and considerable efforts and expenditure are required for controlling and managing these pests and diseases. Widespread use of plant protection chemicals causes environmental pollution, as well as irreparable loss of natural enemies. The cheapest, easy and the most successful plant protection measure against pests and diseases is the use of resistant varieties—which is the first step in the Integrated Pest Management.

Keeping in mind the severity of damage that can be caused by diseases like sheath blight, sheath rot etc. breeding for multiple resistant rice varieties was initiated at Rice Research Station, Moncompu in 1986-87. Hybridization work was carried out between high

yielding varieties like MO 4, MO 5, MO 6, MO 7, IR 8 and Jyothi and varieties/cultures with multiple resistance like Ptb 18, Ptb 33, IR 5, IR 42, IR 50, Cul. 1954, Cul. 25331 etc. Selections were made adopting pedigree method and the progenies were evaluated during subsequent years. After attaining uniformity, the cultures were tested in various yield trials viz., Initial Evaluation Trial, Preliminary Yield Trial, Comparative Yield Trial, Multi-locational trials and Farm Trials, KAUM 38-4-1 (MR 1) consistently outyielded the local checks in all the above trials and was included for National Trials as IET 15923 during Khariff 1997. Here also the culture showed its superiority with respect to grain yield and disease resistance. The culture was released as Gouri (MO 20) for commercial cultivation by the State

Seed Sub Committee during September 2002. A hybrid derivative of Bhadra/Cul. 25331 (Mutant of Oorpandy), Gouri is semi tall, has a duration of 115-120 days and has an average yield of 6-6.5 tonnes per hectare. It has good quality characteristics comparable to other HYVs of the State.

### Agrotechniques for Gouri

Since Gouri is photo insensitive it can be cultivated during all the three seasons of Kerala. In Kuttanad, Gouri can be cultivated during both the seasons, under direct sown as well as transplanted conditions. Under transplanted conditions, 20 days old seedlings should be planted in the main field at a spacing of 20x15 cm. The nutrient requirement is 90:45:45 kg. NPK per hectare. It is highly suited for cultivation in the sheath blight endemic areas, since it is tolerant to sheath blight disease which is a serious threat to rice production in Kerala. It has moderate resistance to sheath rot and gall midge and resistance to BPH. Due to its culm strength, there is no risk of lodging.

Both Breeder and Foundation seeds of Gouri are being produced at Rice Research Station, Moncompu and seeds will be available for further multiplication during April – May 2003. For booking seeds, contact the Professor and Head, Rice Research Station, Moncompu, Thekkekkara, Alleppey Dt - 688 503.

by R. Devika, N. Rema Bai and  
S. Leenakumari

### Winter School on Health care of Wild and Captive animals

The Winter School on Health Care Management and Diseases of Wild and Captive Animals was held at the College of Veterinary and Animal Sciences, Mannuthy. The month long winter school was inaugurated by Dr. J K Sharma, Director, Kerala Forest Institute, Peechi. He said that human activities have a direct link on status of health and diseases of animals. Dr. KV Peter, Vice-Chancellor presided over the function. Dr. AI Jose, Director of Extension, Dr. R Vikraman Nair, Director of Research i/c and Dr. PP Balakrishnan, the then Dean i/c spoke on the occasion. More than 40 scientists from various Veterinary Colleges across the country participated in the winter school.



# Varsha and Swetha – high yielding rice varieties from Pattambi

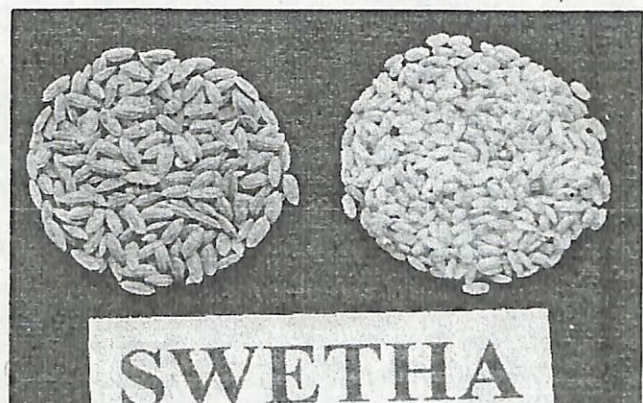
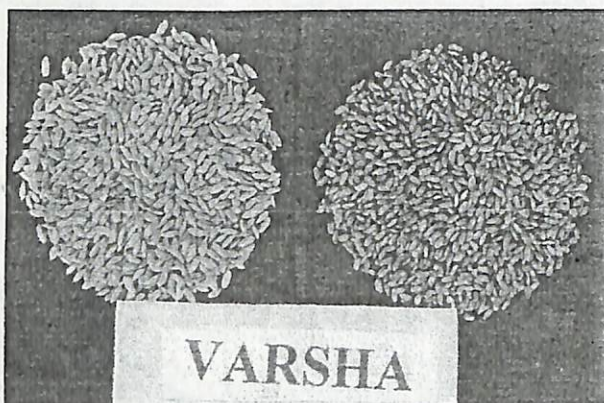
Over dependence on IR 8 cytoplasm and DGWG gene source for developing new rice varieties through pedigree breeding has led to narrowing of the genetic base among the high yielding varieties in rice world-wide. The high genetic uniformity in turn has made the crop a target for attack by pest and diseases. This emphasizes the need for widening the genetic base by introgressing genes from diverse sources. With this objective, a breeding programme was initiated at Regional Agricultural Research Station, Pattambi to develop high yielding, non-lodging rice varieties for

duration varieties grown in the Kole lands of Thrissur. It ranked third in All India Co-ordinated Trials during Kharif 1999 over 11 locations along with 63 other entries. Screening for pest and disease resistance as well as quality parameters was also undertaken. This variety was christened as *Varsha*.

*Varsha* is semi tall, non lodging, medium tillering, erect, photoperiod insensitive, suitable for direct seeding and transplanting in 1st & II<sup>nd</sup> crop season with medium duration (110-115 days). Straw coloured grains with red kernels and milling 71.7%. This vari-

in these areas stipulates that the II<sup>nd</sup> cropping season ends by February. This necessitates the replacement of the presently cultivated extra-long duration varieties like CR 1009 (Ponmany) that matures in 150-160 days.

With this objective, a breeding programme was initiated at Regional Agricultural Research Station, Pattambi to develop a non-lodging, semi-tall rice variety of medium duration for the irrigated transplanted low lands of Palakkad. Selection from culture IET 14735 developed through pedigree breeding method by crossing IR 50 with C 14-8 (a land race from



direct seeding as well as transplanting utilizing the traditional tall indicas prevalent in Kerala.

## Varsha

Induced mutagenesis of Ptb 10 (Pureline selection from Thekkencheera) to develop dwarf mutants was attempted in 1983. M.210, a progeny derived from this programme was crossed with Ptb 28 (Mass selection from Kattamodan) to transfer the resistance genes for drought, blast, other biotic and abiotic stresses. The segregating progenies were subjected to selection in subsequent generations to develop Cul 210-25.

The culture, a promising progeny outyielded other high yielding varieties used as checks in various trials. The yield was also found to be significantly higher than all other medium

duration varieties grown in the Kole lands of Thrissur. It ranked third in All India Co-ordinated Programme for regional adaptability in 1995. Testing of the promising selection for yield, pest and disease resistance and quality parameters was undertaken subsequently.

## Swetha

Unscientific and inappropriate choice of varieties adversely affect the cropping pattern in rice. Lack of uniform cropping and deviations from normal cropping season result in high load of pest and diseases, other associated problems, hampering of irrigation management and lowering of crop productivity. These problems have intensified in the irrigated low lands of Palakkad. A strong need to bring about a change in cropping pattern has been felt so as to increase efficiency of irrigation system. Effective and efficient water management

exhibits moderate resistance to blue beetle, and WBPH. *Varsha* ranked third in national trials with a grain yield of 4.5 – 5.0 tonnes/ha and straw yield of 4.5 - 5.0 tonnes/ha. Average height 96.3cm.

*Swetha* is semi tall, non lodging, medium tillering, erect and photoperiod insensitive variety, suitable for transplanting during second crop season. It is having a long duration of 140-145 days. Grains are straw coloured with white kernels (milling % 71.5). This variety exhibits moderate resistance to gall midge and stem borer, low susceptibility to blast, brown spot, sheath blight and sheath rot with a grain yield of 4.5 - 5.0 tonnes/ha and straw yield of 5.0 - 6.0 tonnes/ha.

by Gregory Zachariah



## Dr. Aravindakshan bags Rajib Goyal Prize

Dr. TV Aravindakshan, Asst. Professor, College of Veterinary and Animal Sciences, Mannuthy was awarded the Rajib Goyal Prize for Young Scientist -2001 in the field of



Veterinary and Animal Sciences. The award carries Rs.50000 in cash along with Silver Medal and Citation. The award is instituted by the Kurukshetra University on all India basis.

## Elected to Academic Council

In the election held for the reconstitution of the Academic Council of KAU, the following members were elected.

### Post Graduate Students

KP Suresh, College of Horticulture, Vellanikkara

R.Renjith, College of Veterinary & Animal Sciences, Mannuthy.

### Research Student

Allan Thomas, College of Horticulture, Vellanikkara.

### Teachers of Faculties

#### Faculty of Agriculture

Dr. TE George, Assoc. Professor, College of Hort., Vellanikkara

#### Faculty of Veterinary & Animal sciences

Dr. Aravinda Ghosh, Assoc. Professor Veterinary Hospital, Kokkalai

#### Faculty of Fisheries

Dr. CG Rajendran, Assoc. Professor Rice Research Station, Vyttila.

#### Faculty of Agrl. Engg. & Technology

Jippu Jacob, Assoc. Professor KCAET, Tavanur.

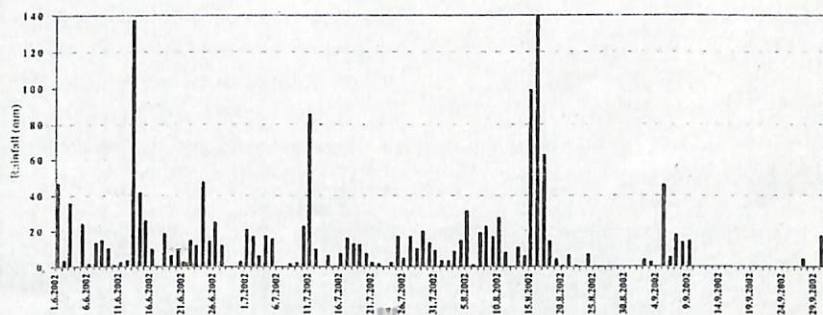
## Indian drought 2002

Indian drought is defined as the drought when the rainfall deficiency for the country as a whole is more than 10 % of normal and more than 20% of the country's area is affected by drought conditions. Such situation prevailed across the country during monsoon 2002, and hence it is declared as the Indian drought year. Such drought last seen was in 1987 when monsoon failed across the country.

In Kerala, the rainfall during

monsoon was less by 35% during monsoon 2002. It was one of the lowest monsoon rainfall years. The water level in major hydel power generation reservoirs was low when compared to normal rainfall year, thereby the power generation produced was less.

At Vellanikkara, the monsoon rainfall was less consecutively for four years, viz., 1999 - 2002. The year 2002 recorded the lowest monsoon rainfall (less by 28%).



Daily rainfall (mm) at Vellanikkara from 1-6-2002 to 30-9-2002

Percentage deviation in monsoon rainfall over normal (1980-2002) at Vellanikkara

Year	June	July	August	September	June-Sept
1998	10	10	-5	133	21
1999	-32	20	-43	-88	-24
2000	-15	-52	14	-19	-22
2001	-8	-31	-44	-16	-21
2002	-28	-48	12	-50	-28

## Intensive Care Unit for animals

The Veterinary Hospital, Kokkalai, under the KAU has set up a full fledged Intensive Care Unit for the treatment of animals under critical conditions. This is the first time that such a facility has been provided in a veterinary hospital in Kerala.

Animals brought with snake bite and those met with road accidents would need immediate care and treatment to save their life. Domestic animals also need special attention when they are under critical diseased condition. The Intensive Care Unit has been provided with all advanced facilities



Intensive Care Unit for animals ready to meet any emergency

such as ECG, Ultra Sound Scanning, X-Ray, oxygen supply, facilities to test blood, urine and faecal samples of animals, Foetal Monitor to test the pregnant animals etc to meet any emergency situation.



## Vermi-Coir pith and Super compost unit

The unit on Vermi-Coir pith and super compost is one of the successful small-scale industrial units under the Agricultural Technology Information Centre (ATIC) of KAU. The unit which started working with a revolving fund of Rs.30000 is now providing vocational support to six trainees of which five are women. So far, about one lakh rupees has been distributed as salary to the trainees, besides contributing substantially to the

infrastructure and contingency requirement of the unit. It also now invokes provision for post graduate level research on various aspects of microbial composition as well as substrate controlled composting techniques of different forms and grades of agro wastes. Besides performing as a pedagogic unit of effective recycling of agro wastes vis-à-vis practical implications of organic farming, with the growing awareness of sustainable



Vermi-Coir pith and Super compost unit trainees at work in the unit

agriculture and organic way of life, this unit now attracts a large number of farmers and ventures who are interested to initiate this type of units at different parts of the state. This unit is effectively performing the purpose of technology transfer as envisaged in the ATIC.

Quality manures such as vermi compost and coir pith compost, vermi wash production units and vermi seeds are now available for sale at the ATIC. The vermi compost is an ideal blend of plant nutrients with the worm enzyme and probiotics to boost the plant performance. The NPK content of vermi compost on an average is 1.5,0.4 and 1.8% respectively. The vermi wash units are to produce the nutrient spray solution containing the enzymes and probiotics. The vermi wash spray can produce excellent results in high value horticultural crops such as orchids and anthuriums. The earth worms on sale are exotic species with surface feeding nature such as *Eudrillus euginae* and *Iseinia foetida*. The coir pith compost has major advantages like increasing the moisture retention of the soil which enables the crops to withstand the summer effectively. It also provides major plant nutrients as well as increase the soil organic matter.

### NATP Review Meeting

The Review Meeting of the National Agricultural Research Project (NATP), Prioritisation, Monitoring and Evaluation (PME) Cells was held at KAU, Vellanikkara on January 16 and 17. Addressing the meeting Dr. Mruthy unjaya, Director, National Centre for Agricultural Economics and Policy Research, Agriculture Research was not merely developing improved breeds or releasing high yielding varieties but it should really change the life of ordinary farmers. The KAU is implementing 44 Research Projects under NATP with a total outlay of Rs. 10.37 crores.

Dr. K.V. Peter, Vice Chancellor inaugurated the review meeting. Dr. Suresh Pal, Principal Scientist presented an overview of the NATP Projects.

### Fisheries College bags prizes in International Aqua show

College of Fisheries, Panangad bagged the first prize for the best collection of indigenous ornamental fishes, first prize for the best decorated stall (shared between College of Fisheries, Panangad, Dept. of Fisheries and CUSAT) and second prize for the best stall setup by Educational Institutions in the Aquashow 2003 exhibition held at Kochi from December 29, 2002 to January 4, 2003 by the Government of Kerala. It was an international exhibition of ornamental fishes in which different states of India and many other countries participated. Forty five species of indigenous ornamental fishes of the Western Ghats were exhibited in the show, in addition to young one of captive produced species of fishes.

### ICAR Short Course on Gender Perspective in Agriculture

The Centre for Studies on Gender Concerns in Agriculture of KAU organized the ICAR sponsored Short course on Gender Perspective in Research, Extension and Education for Agricultural Development. The National Course of ten days duration was aimed to build necessary capacity for mainstreaming gender in agricultural development efforts, among the Scientists of ICAR and State Agricultural Universities. Twenty three Scientists from various faculties of Agriculture, Fisheries, Forestry, Veterinary, and Home science from different States participated in the course. The Course was offered with the technical collaboration of the M.S. Swaminathan Research Foundation.



## Agri Tech. Expo-2002 held at KCAET Tavanur

Shri. ET Muhammed Basheer, MLA, inaugurated the All India Agricultural Engineering Exhibition, Agri-Tech-Expo-2002 at the Kelappaji College of Agricultural Engineering & Technology, Tavanur. Inaugurating four day exhibition and technical seminars, Shri Basheer said

that there was a dire need to solve the vexed problems relating the production and productivity which distract the farmers of Kerala from cultivation of agriculture produces. There were a lot of research achievements in the field of agriculture. But it was doubtful whether the results of research had

actually reached the needy farming community. The agriculture scientists should seriously pond over it, he said.

Dr. KV Peter, Vice-Chancellor presided over the function. Thirty institutions under the Central, State, Cooperative and private sectors engaged in the manufacture of agricultural machineries, implements, irrigation machineries, pumpsets and a host of other activities related to agriculture participated in the exhibition.

The State Level Agriculture Award winners in the Malappuram district were honoured in the valedictory function by adorning them with ponnada. They included Dr. Velayudhan, Karshakajyothi-2000, Shri. E. Aliyas, Young Farmer 1988-89, Shri T.V. Thomas, Karshakasree 2002, Shri Moorkoth Kunjikader Hajee, Kerakesari 1996-97, and Shri Shahul Hameed Karshakothama 1998-99.

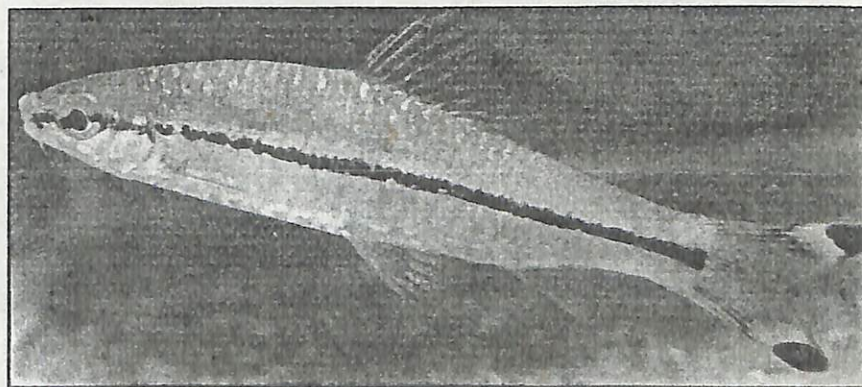


*Machine for large scale dehusking of coconut*

## Captive breeding technology developed for Indigenous ornamental fishes

The College of Fisheries Panangad, under the leadership of Dr. TV Anna Mercy has developed, for the first time, the Captive breeding technology for the ornamental indigenous fishes. The commendable work has been done as a part of the project *Germplasm Inventory, Evaluation and Gene banking of fresh water fishes*. The objective of the project is to develop and propagate the potential ornamental fishes of the Western Ghats.

As a part of the project, 60 species of the fishes could be collected from different river systems of Western Ghats and acclimatized to captive conditions. Their behaviour, feeding and compatibility with other species of fishes in captive conditions were studied. Based on these studies,



*An Indigenous ornamental fish*

55 species were recommended as ideal for the ornamental fish industry.

All the ornamental fishes being used in India are exotic. India is blessed with rich bio diversity in the Western Ghats with regard to endemic fish resources. Even though there are quite a

lot of indigenous fishes that are ideal as ornamental fishes they have not received sufficient attention and popularity among the ornamental fish traders and aquarium hobbyists. Tropical fishes always attracted aquarium hobbyists. But India's contribution to this field was quite negligible.