

## OPINION

### Moving With The Times: Revamping The Digital Banking...



Ammar Muzaffer

As the world continues to tackle one of the biggest pandemics in modern history, countries are opening up to the reality of a 'new normal' once things actually settle down. Pakistan is among the few countries where the impact has been slightly less damaging than expected but still, the health and economy of the country in particular have made most individuals and businesses realize the need to accept significant changes in their lifestyles.

The most meaningful is mobile banking's share in the total e-banking value surged to 4.75pc in July-September from just 1.87pc in the corresponding period of last year. This marked a fast convergence with internet banking whose shares in the respective periods were 5.68pc and 3.68pc.

Page No 03

### Dose Optimization And Resistance By Seedling And Seed Assay Through RISQ Test In Phalaris Minor



Muhammad Usama Rasheed, Athar Mahmood, Maria Naqve

Pakistan being an agriculture-based country with a large number of hectares of growing and generating a large number of wastes related to agriculture. Among various weeds which effect the wheat crop, Phalaris minor Retz. (Little seed canary grass) exists as an alarming problem for a healthier wheat and good yield. Weeds are actual enemy of crops, the weeds inhibits the functions of plants and also effect the growth and development

Page No 04

### Parthenogenesis: A Miracle Of Nature



Kashif Hussain

Parthenogenesis is considered an asexual form of reproduction, but more precisely, it is an incomplete form of sexual reproduction

Normally, eukaryotic multicellular organisms (plants and animals) produce their offspring by the process of sexual reproduction (fertilization): male gamete(1n) and female gamete(1n) combine during fertilization and lead to form the zygote(2n) that undergo cell division and leads to the formation of an organism.

Sometimes, they undergo development through asexual reproduction (parthenogenesis): a kind of self-imprinting during which an unfertilized egg produces the zygote that further develops into an organism. Parthenogenesis takes place in both plants as well animals.

Page No 03

**Exciting Venture by Excise, Taxation and Narcotics Control Department, Punjab**  
A chance to get a universal number plate of your choice online through a province-wide

**e-Auction**  
First e-Auction: on 2023

Citizens can avail following services:

- Participation in online auction
- Personal choice of car numbers

For more details, visit website [www.excise-punjab.gov.pk](http://www.excise-punjab.gov.pk)  
☎ 0800-08786

## 2.6 Lac Citizens Registered For Vehicle Numbers Via E Auction App

PITB Chairman stated that system has also been linked to e-Pay Punjab for fee payment, while department has so far collected more than Rs.550 M in revenue.

The Punjab Information Technology Board (PITB), in collaboration with the Punjab Excise and Taxation Department, has registered over 2.6 lakh applicants to obtain attractive vehicle numbers through the e-Auction App and Web Portal since August 2020. This was revealed during a progress review meeting here at Arfa Software Technology Park, which was presided over by PITB

Chairman Faisal Yousaf (ASTP).

It was revealed during the meeting that over 1 lakh 74 thousand applications had been approved, with approximately 1 lakh 20 thousand vehicle numbers sold through the system to date.

On this occasion, PITB Chairman Faisal Yousaf stated that the system has also been linked to e-Pay Punjab for fee payment, while the department has so far collected more than Rs. 550 Million in revenue.

According to the chair, the e-Auction App and Web Portal have enabled people to secure attractive car numbers online

from the comfort of their own homes.

The system includes auctions for automobiles, motorcycles, and commercial vehicle license plates. The system also displays information about the winning bidders. As part of the package, a tax calculator and vehicle verification service are also available online.

The Punjab Excise and Taxation Department is a government agency responsible for the collection of taxes and fees related to the production, sale, and consumption of goods and services in the Indian state of Punjab. The

department is responsible for enforcing laws and regulations related to sales tax, excise tax, luxury tax, and other forms of taxation.

E-auction app and web portal allow users to participate in auctions online. The platform typically includes a mobile app and a website that users can access to view and bid on items up for auction. The e-auction platform may include features such as real-time bidding, automatic bid increments, and notifications for when a user has been outbid. It can be used for various types of auctions, such as real estate, vehicles, art, and more.

### PTA Renews Jazz License For Fee Rs. 24.24 Billion

The license is renewed for a fee of USD 486.2 million for 15 years, of which Jazz has paid 50% and the remaining amount will be paid in 5 equal annual instalments.

Pakistan Telecommunication Authority (PTA) has received a deposit of Rs. 24.24 billion (USD 105.80 million) from Pakistan Mobile Communications Limited (Jazz) for license renewal fees.

The funds have been deposited in the Federal Consolidated Fund (FCF). With this deposit in FCF, PTA's total deposit in FCF for the current fiscal year, 2022-23, will be Rs. 56.57 billion (equivalent to USD 253.78 million).

In accordance with the Federal Government's Policy Directive, Pakistan Mobile Communications Limited (Jazz) has renewed its license with the Pakistan Telecommunication Authority (PTA).

The Federal Government of Pakistan's policy directive requires telecommunications companies operating in the country to renew their licenses with the Pakistan Telecommunication Authority (PTA) in order to continue providing services to customers.

The license is renewed for a fee of USD 486.2 million for 15 years, of which Jazz has paid 50%, or Rs. 44.54 billion (equivalent to USD 243.1 million), and the remaining amount will be paid in 5 equal annual instalments, plus applicable markup. The terms and conditions for coverage and quality of service have been improved in the renewed license.

Dr. Muhammad Sohail Rajput, Federal Secretary for IT & Telecommunication; Maj. General Amir Azeem Bajwa (R), Chairman PTA; Dr. Khawar Siddique Khokhar, senior management of PMCL ...Read More

### SECMC Signs MOU For Trial Run Of Thar Coal For Cement Production



Power Cement will conduct a trial run of Thar coal for cement production in their kilns under terms of MoU, which will help them offset their demand for imported coal.

Sindh Engro Coal Mining Company (SECMC) and Power Cement have agreed to conduct

a trial run of Thar coal for cement production in their manufacturing unit. Sindh Engro Coal Mining Company CEO Amir Iqbal and Power Cement CEO Kashif Habib signed the memorandum.

Power Cement's Chief Operating Officer Ahsan Anis,

Director Export Marketing Saifuddin Khan, and DGM International Trade Badar Bin Anwar were also present. Manager Business Development Faisal Aziz, Manager Technical and Mine Planning Arsalan Anwar, and Manager Commercial Faizan Rafique accompanied him.

Power Cement will conduct a trial run of Thar coal for cement production in their kilns under the terms of the MoU, which will help them offset their demand for imported coal.

In response to this development, Sindh Engro Coal Mining Company CEO Amir Iqbal stated that Thar coal has the potential to reverse the country's short- and long-term economic crisis...Read More

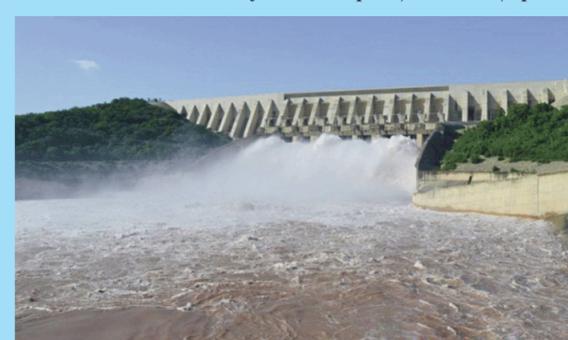
## Mohmand Dam Project Schedules To Complete In November

WAPDA is building the Mohmand Dam Hydropower Project on Swat River, upstream of the Munda Headworks in Khyber Pakhtunkhwa's Mohmand District.

Chairman WAPDA Engineer Lt Gen Sajjad Ghani (Retd) was informed during his visit to the under-construction Mohmand Dam Project, that the diversion system is scheduled for completion in November this year, with the project expected to be completed in 2026.

Naveed Asghar Chaudhry, Member (Finance) of WAPDA, and Engineer Jamil Akhtar, Member (Power) of WAPDA, were also present during the Chairman's visit to the

Mohmand Dam Project. WAPDA is building the Mohmand Dam Hydropower Project on the Swat River, upstream of the Munda Headworks in Khyber



Pakhtunkhwa's Mohmand District.

The Chairman reviewed construction work on various sites today, including the re-regulation pond, main dam, spillway,

### Project Launches To Assess Potential Of Placer Gold Deposits

"The government is leaving no stone turned for promotion and development of exploration and mining of minerals in the province of Punjab," Waqas Rasheed said.

The Punjab Mines and Minerals Department, in collaboration with the Geological Survey of Pakistan, launched a project on Tuesday to assess the potential of placer gold deposits in the Indus River in District Attock.

Captain (Retd) Waqas Rasheed, Additional Secretary Mines and Minerals Department Punjab, and officials from the Geological Survey of Pakistan and the Punjab Mines and Minerals Department visited the project site in the Indus River at Attock Kurd.

Waqas Rasheed told reporters that the evaluation project would be completed at a cost of Rs 48.2 million, with a detailed report due by June 2023. He stated that the assessment project of placer gold deposits was carried out using drone technology, geology surveys, induced polarisation, and sampling.

He stated that, as a result of the survey, sampling of underground material would be done through additional drilling in the promising area. "The province of Punjab is very rich in minerals, and each district has some distinct wealth in its geological structures and topography," he added.

Rasheed stated that while Punjab was rich in natural resources, there was an urgent need for search and exploration. "However, development and prosperity depend on the proper use of these resources with wisdom and



intelligence."

"The government is leaving no stone turned for the promotion and development of exploration and mining of minerals in the province of Punjab," he said.

Placer gold deposits are concentrations of gold that have been deposited in rivers, streams, and other bodies of water. These deposits are typically formed by the erosion and weathering of gold-bearing rocks, which causes the gold to be washed into the water and deposited in gravel beds, sand bars, and other areas where the water flow slows down.

Placer gold can be mined using a variety of techniques, including panning, sluicing, and dredging. The location of placer gold deposits is typically determined through geological mapping, sampling, and testing.

diversion tunnels, access tunnel, power intake, power house, switch yard, and irrigation system, among others. He urged the project management team to strictly adhere to the specifications laid out for the project's construction. After reviewing the pre- and post-flood situations, the chairman concluded that concerted efforts are required to complete this megaproject on time. WAPDA's project management, consultants, and contractor will need to be proactive in this regard, he added. Later, the GM and PD of the Mohmand Dam Project, flanked by the consultants and the contractor, provided an update on the project's progress...Read More



## AKUH Pharmacy Trainee Program Receives ASHP Accreditation

With this ASHP accreditation, the AKUH Pharmacy Residency Program has become an internationally recognized training site.

The Aga Khan University Hospital's flagship Pharmacy Trainee Program has been awarded the prestigious American Society of Hospital-System Pharmacists (ASHP) accreditation for International Pharmacy Practice Residency Programs (IPPR), making it the first academic medical center outside of the United States, the third international hospital, and the first in Pakistan to receive the prestigious three-year accreditation.

This accreditation helps to raise the training standards for pharmacists, who provide critical services in patient care. With expert management of the patient's response as well as medicine interaction, well-dispensed medicines ensure their best use and efficacy.

With this accreditation for Pharmacy Trainee Program, the AKUH Pharmacy Residency Program has become an internationally recognized training site, serving as a role model for producing exemplary practitioners who will positively impact pharmacy practice in Pakistan.

Since 1990, AKUH has offered a one-year pharmacy traineeship programme, with over 800 alumni providing professional pharmacy services and serving as pioneers in the field in Pakistan.

The accreditation also elevates AKUH's traineeship programme to a residency model with international recognition, joining a community of over 2,000 accredited sites worldwide.

AKUH's pharmacy traineeship program met stringent competencies, educational goals, and objectives as part of the accreditation process, including more than 100 ASHP residency learning objectives and more than 200 measurable elements.

ASHP standards cover fundamental pharmacy practise areas like practise foundation skills,



drug information and medication policy, drug safety, practise management and leadership, patient care, education of others, and project management.

"The ASHP accreditation is a testament to the fact that our patients are at the forefront of everything we do," said Dr.

Farhat Abbas, interim CEO of AKU Health Services Pakistan, adding, "This accreditation is not only a feather in the cap for AKUH but also for the country."

Dr. Adil Haider, Dean Medical College, AKU, praised the teams for their dedication and hard work, saying, "By becoming ASHP-accredited, AKU has demonstrated its continuing commitment to advancing pharmacy practice and providing quality patient care," adding that the accreditation will serve as a means to adopt and implement an even higher quality pharmacy

standards of healthcare in Pakistan, and we achieved this goal through the ASHP accreditation, which marks us as a world-class institution for hospital pharmacy practise and training, ensuring that our patients benefit from international best practises of pharmacy."

The American Society of Hospital Pharmacists (ASHP) is a professional organization based in the United States that represents pharmacists who work as patient care providers in hospitals and other healthcare settings.

Hospitals with accredited pharmacy residency programs, they believe, are publicly demonstrating their commitment to advancing pharmacy practice and providing high-quality patient care. Among the nearly 75,000 members of the organization are pharmacists, student pharmacists, and pharmacy technicians.

AKUH pharmacies are trusted for delivering high-quality and authentic medications through a robust team of highly qualified pharmacists and technicians, as one of the most innovative and comprehensive institutional pharmacy networks in Pakistan. Our pharmacy residency program is the largest ASHP-accredited program in the world, with the goal of developing competent pharmacists with the skills and professional knowledge needed...[Read More](#)

## NPO Organizes Workshop To Increase Economic Productivity



The speakers at workshop stressed the importance of research and development, technology, and skilled and innovative labour in increasing economic productivity.

The National Productivity Organization (NPO) and the Asian Productivity Organization (APO), Japan held a one-day workshop at the Serena Hotel on Tuesday. The speaker at the economic productivity workshop stressed productivity-led economic growth in Pakistan and the need to increase productivity in the country's industrial sector.

The speakers at the workshop stressed the importance of research and development, technology, and skilled and innovative labour in increasing economic productivity.

The workshop, titled "APO

Vision 2025: Inclusive, Innovation-Led Productivity Growth in the Asia-Pacific," was co-hosted by the National Productivity Organization (NPO), the Ministry of Industries and Production, and the Asian Productivity Organization (APO) in Tokyo, Japan.

According to experts, Pakistan's current account deficit is difficult to resolve without increasing exports and foreign investment. He stated that in order to attract exports and foreign investment, productivity and industrial output must be increased.

Meanwhile, businessmen and individualists addressing the audience stated that technology and manpower can play an important role in the country's productivity....[Read More](#)

## IoT And AI Investment Can Boost Pakistan's Export Of ICT Services



Umair Azam said that export of ICT services, including telecommunication, computer, and information services, reached US\$2.6B in FY22, up from US\$2.1B in FY21.

Umair Azam, Founder and CEO of Integration Xperts, said that the export of ICT services, including telecommunication, computer, and information services, reached US\$2.6 billion in FY22, up from US\$2.1 billion in FY21, and it can be significantly increased by focusing on cloud deployments and investing in newer technologies such as IoT and AI.

Umair shared these thoughts during a panel discussion titled "IT Exports and the Way Forward" at the recent Global Digital Summit 2023 in Islamabad.

"The IT sector in Pakistan has shown consistent growth over the last few years, giving us a glimpse of its potential. Support from the government and academia for improving the ease of doing business, tax breaks, promoting research and development, and producing skilled human resources can do wonders for Pakistan," said Umair Azam....[Read More](#)

## Cabinet Preparing Strategy To Prevent Future Power Outages



Prime minister directed that the factors causing power outages be identified and that steps be taken to ensure that such a situation does not occur again in the future.

The federal cabinet has directed the development of a comprehensive strategy to prevent significant disruptions in the country's electricity system in the future and to permanently address the factors that cause power outages while providing people with electricity, water, gas, and other services.

A first-of-its-kind nationwide public awareness campaign has been approved to instil the habit of resource conservation and its importance, popularise energy-saving habits, and incorporate global practises into the curriculum.

Saving electricity, gas, and water in public, private, domestic, and commercial settings will result in a significant reduction in the import bill for petroleum products, which has more than doubled in the last seven years. A shift in national attitudes toward energy conservation will save billions of rupees in foreign exchange and significantly reduce the public bill by 30 to 40 percent at the individual level. The cabinet was pleased with the briefing provided by the Ministry of Information and Broadcasting ...[Read More](#)

## Need To Revitalize Cotton Breeding Programs: PKI

Cotton is a basic raw material to the largest industrial sector and the largest export earnings which should be given its due share, PKI President proposed.

The Pakistan Kissan Ittehad (PKI) has proposed engaging technology-providing seed companies to revitalize cotton breeding programs by taking into account local issues such as heat tolerance and uniform maturity, which are suitable for machine picking and high-density production.

While speaking to the media, PKI President Khalid Mahmood Khokhar claimed that agriculture is an important pillar of the economy that has been overlooked by previous governments.

There is an urgent need to examine crops that make significant contributions to the economy and assign them the appropriate priority level. Crops that are a drain on the economy or natural resources must be avoided and only grown for domestic consumption.

Cotton is a basic raw material to the largest industrial sector



and the largest export earnings which should be given its due share, he proposed.

Pakistan's existing resources have the potential to produce 15-18 million bales (water and soil). Cotton's historical area in Pakistan was 3.2 million hectares, but it is now less than 2 million hectares.

Pakistan used to produce over 14 million bales per year, but that number has now dropped to 7 million bales. On the other hand, he claims that demand in the local textile industry has

increased to 15-16 million bales, with imports filling the gap.

Cotton growers should be assisted in increasing area and productivity, according to Khalid, by providing equal opportunity and a level playing field in the region. "We can hardly think of any country that grows cotton without providing subsidies in the form of direct assistance, insurance, lower input prices, support prices, etc.," he added. He claimed that government funds for cotton research...[Read More](#)

## NICAT Pakistan To Aid Building Aerospace Entrepreneurial Ecosystem

NICAT shall concentrate on aerospace technologies, high-tech engineering, and deep technologies related to ICT and related domains.

Speaking at the event, ACPL CEO Air Commodore Dr Liaquatullah Iqbal revealed that the ACPL is establishing NASTP to promote, form, and develop small to large-sized aviation and space-related enterprises, laboratories, and R&D centers on a national scale. He also stated that the NICAT will be established at NASTP and will aid in the nurturing and development of Pakistan aerospace related entrepreneurial ecosystem.

NICAT is being established in collaboration with Ignite (the National Technology R&D Fund) and Aviation City Pakistan (ACP), with Ignite funding NICAT, which will be housed within ACP's newly constructed Alpha Facility at the National Aerospace and Software Technology Park (NASTAP)...[Read More](#)

## Experts Stress On Prioritizing Education For Human Development

The CEO of Idara-e-Taleem-o-Aagahi stressed the importance of improved school infrastructure. She advocated for increased education funding and resources.

The United Nations established the International Day of Education in 2018 to recognize the critical role of education in promoting peace and human development.

On this International Day of Education, experts stressed the importance of prioritizing education for human development, particularly during disasters, so that learners do not lose their right to an education, and they emphasized the role of political parties in ensuring quality education.

These thoughts were expressed during a dialogue conducted by Awaz CDS and the Child Rights Movement with the theme "to invest in people, prioritise education."

According to Mr. Zia ur Rehman, Chief Executive Officer

of Awaz CDS, this event was an attempt to raise awareness about the complexities of issues in the education sector through panel discussions of both development sector officials and government officials.

He went on to say that the root cause of our educational crisis is a failure to implement government policies already put in place, and once Pakistan succeeds in implementing the legis-

lation and policies, progress and development are not far.

The first panel discussion sought to address the challenges of providing and obtaining education in disaster-stricken Pakistan. Ms. Zehra Kaneez, National Coordinator, Pakistan Coalition for Education, stated that even those who had educational resources, such as schools, lost them instantly due to a lack of disaster-resistant

measures and infrastructure, highlighting the critical need to invest in disaster-resilient systems and infrastructure. The CEO of Idara-e-Taleem-o-Aagahi, Ms. Baela Raza Jamil, stressed the importance of improved school infrastructure. She advocated for increased education funding and resources. Mr. Syed Ishtiaq Ul Hassan Gilani, Chief Executive Officer of the United Nations Development Programme, stressed the additional concern of child abuse and child trafficking, which can be significantly reduced if Pakistan implements a free and compulsory education policy rigorously. Ms. Ayesha Khan, Country Director of Hashoo Foundation, began the next panel discussion by concluding the previous one and reminding everyone of the importance of public-private sector collaboration as well as reasserting civil society's effective role in addressing this nationwide educational disparity....[Read More](#)



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Ammar Muzaffer

The new BankIslami app for instance, now offers consolidated dashboard for viewing all active accounts along with their status. The program is secured and accessible through biometric or facial recognition



## Moving With The Times: Revamping The Digital Banking Landscape In Pakistan

As the world continues to tackle one of the biggest pandemics in modern history, countries are opening up to the reality of a 'new normal' once things actually settle down. Pakistan is among the few countries where the impact has been slightly less damaging than expected but still, the health and economy of the country in particular have made most individuals and businesses realize the need to accept significant changes in their lifestyles.

The most meaningful is mobile banking's share in the total e-banking value surged to 4.75pc in July-September from just 1.87pc in the corresponding period of last year. This marked a fast convergence with internet banking whose shares in the respective periods were 5.68pc and 3.68pc.

was accompanied by an addition of 2.61 million mobile and 875,284 internet banking users in July-September over the same quarter of 2019-20.

The incorporation of technology is one aspect that has taken center stage in light of the COVID-19 outbreak. From education to banking, customers have become more accepting towards digital platforms.

Pakistan is among the countries where the landscape for online service delivery has been relatively underdeveloped and although the current administration launched massive steps like the Digital Pakistan Initiative and a variety of other campaigns to revamp the respective infrastructure in the country, acceptance at the customer level is still low. However, a range of collective efforts from various stakeholders and a push provided by the current crisis is beginning to bear fruit. Mobile banking platforms in Pakistan reported between 17% to 34% rise in usage after lockdowns were initiated across the country in order to limit the spread of COVID-19. The total number of mobile accounts in Pakistan currently stands at 46 million while the tally of active accounts is 25 million. According to recent statistics presented by the Ministry of IT, export remittances grew 23.71% during July to September 2020 compared to last year, "Almost \$1.2 billion was received through IT and IT-enabled services' exports during fiscal year 2019-20."

Financial institutions have had a crucial role in creating avenues for customers to reduce their dependence on

cash and move towards digital transactions. Most major banks have revamped their digital banking programs. The likes of BankIslami, HBL Konnect, Easypaisa and Jazz cash have recently launched updated versions of their mobile apps which address customer concerns about these platforms not being user friendly or aesthetic.

The new BankIslami app for instance, now offers consolidated dashboard for viewing all active accounts along with their status. The program is secured and accessible through biometric or facial recognition. Major functions like bill payments and transfers require just a few taps.

Moreover, it offers additional security through device tagging and a simplified user experience for enabling SMS alerts as well as card management for customers to stay updated with the status of their banking products.

Pakistan has a high smartphone and broadband coverage penetration which provides a strong foundation for customers to accept digital banking services.

Account opening in banks is also undergoing a process of simplification to allow online registration.

The same goes for mobile money management solutions which offer direct registration within the app.

The development of Alternative Delivery Channels is becoming an imperative factor in creation of a sustainable ecosystem for digital payments. With apps now becoming simpler to use and account opening being less of a hassle, the financial inclusion in the country is bound to rise which will be a healthy sign both for the economy as well as international investments.

Recently issued report from the State Bank of Pakistan (SBP). It's the Payments Systems Review for July-September. It reveals that the total payments transactions grew by 23 per cent year-on-year in volume and 8pc in value in the first quarter of 2020-21.

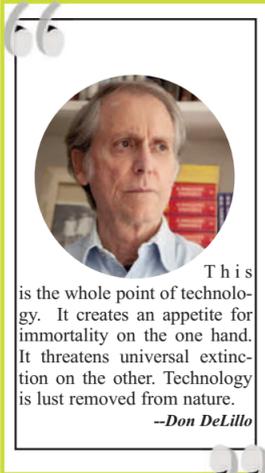
Much of the gains by mobile banking were made in the April-June quarter, lending some weight to the hypothesis that Covid-19 triggered a shift towards digitisation in Pakistan. And the improvement was across the board as each of its four components more than doubled: intrabank fund transfers surged 162pc year-on-year to Rs320.2 billion in July-September, interbank 264pc to

Rs426.9bn, utility bills 214pc to Rs34.2bn and miscellaneous payments 206pc to Rs127.5bn.

On the flip side, the share of e-commerce in overall e-banking hasn't posted any worthy improvement. It was just 0.06pc in the latest period as opposed to 0.02pc in the first quarter of 2016-17 an increase of only four basis points in an equal number of years. This is despite a big jump in the supply side as proxied by the number of merchants registered with banks. Their number soared by 53.5pc to 2,164 in the period under review, from 1,410 a year ago.

Another noticeable change is the growing share of debit cards in point-of-sale transactions compared to credit, which has receded some ground. The former rose to occupy 54.18pc of the total POS value in the first quarter of the current fiscal year from 48.67pc in the corresponding period last year while the latter fell to 45.2pc, from 50.82pc.

Pakistan is witnessing a wave of digitization especially among the financial sector. It is not just about e-commerce, mobile banking and preference for POS transactions but a changed orientation towards other platforms like budgeting apps as well...[Read More](#)



This is the whole point of technology. It creates an appetite for immortality on the one hand. It threatens universal extinction on the other. Technology is just removed from nature.

—Don DeLillo



Kashif Hussain

Parthenogenesis is divided into haploid and diploid parthenogenesis based on the number of chromosomes in the offspring



## Parthenogenesis: A Miracle Of Nature

Parthenogenesis is considered an asexual form of reproduction, but more precisely, it is an incomplete form of sexual reproduction.

Normally, eukaryotic multicellular organisms (plants and animals) produce their offspring by the process of sexual reproduction (fertilization): male gamete (1n) and female gamete (1n) combine during fertilization and lead to form the zygote (2n) that undergo cell division and leads to the formation of an organism. Sometimes, they undergo development through asexual reproduction (parthenogenesis): a kind of self-imprinting during which an unfertilized egg produces the zygote that further develops into an organism. Parthenogenesis takes place in both plants as well animals.

The word parthenogenesis is a combination of "Parthenos", meaning virgin, and "genesis", meaning birth. It is the development of an offspring from a female's ovum without fertilization (mating of male and female gametes).

Animals that undergo the process of parthenogenesis are described as a parthenogenic animal. Parthenogenesis is considered an asexual form of reproduction, but more precisely, it is an incomplete form of sexual reproduction because offspring develop from gametes.

Normally, gametes (the reproductive cells) undergo meiosis: a reduction division in which chromosomes of diploid cells (2n) undergo fission. As a result,

four haploid cells (1n) are produced.

Parthenogenesis is part of the apomixis process in plants. The process of parthenogenesis mainly occurs in invertebrates, including wasps, helminths, water fleas, mites, bees, scorpions, and other insects. Invertebrate animals such as amphibians, reptiles, few birds, and fish species (sharks) have been found.

Types of Parthenogenesis  
Parthenogenesis is divided into haploid and diploid parthenogenesis based on the number of chromosomes in the offspring.

**Haploid Parthenogenesis**  
An embryo develops from an unfertilized ovum, during which the oocyte (1n) haploid chromosomes develop into a zygote with haploid chromosomes (1n), and ultimately a haploid organism is produced because of mitotic division. There is no fusion with other cells, mainly found in bees and other Hymenoptera members. It is facultative, means an organism develops from an oocyte when a male is not available.

**Diploid Parthenogenesis**  
A diploid Oocyte (2n) is produced because of defective meiosis and undergoes further division without fertilization. A diploid offspring are produced in the case of diploid parthenogenesis. After zygote formation, no meiosis leads to the production of a diploid organism. It is obligate parthenogenesis and is mainly found in Coccoidea, Hemiptera, and curculionid beetles.

The diploid parthenogenesis is

further divided into automixis and apomixis:

**Automixis parthenogenesis (Meiotic Parthenogenesis)**

The oocyte fuse with the polar body and produces a zygote that leads to the development of an embryo and, ultimately, an organism. The merging of the egg and polar body stimulates the new alleles' production, and an offspring similar but not a full clone of the mother is produced. As the offspring is produced after getting an X-chromosome, in the case of automixis parthenogenesis, mainly female and rarely male is produced.

**Apomixis parthenogenesis (Apomictic or Automatic)**  
A mature egg cell leads to the production of an embryo, which is diploid. There is no meiosis during the egg production process, and egg cells undergo cell division, and offspring formation. Such an offspring will be a full clone of the mother. Such kind of parthenogenesis is mainly found in plants.

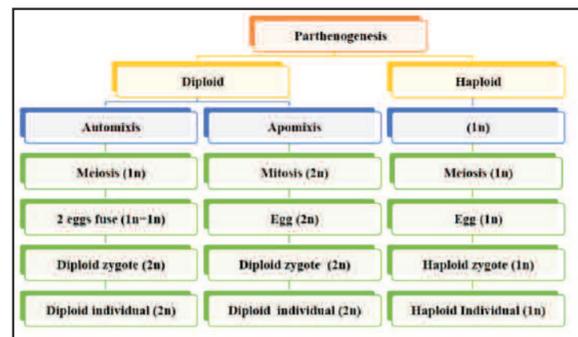
**Facultative parthenogenesis** occurs in organisms that can produce offspring through sexual and asexual reproduction. These organisms undergo asexual reproduction when males are not available. In the case of obligate parthenogenesis, organisms reproduce only through asexual reproduction, for example, some reptiles (lizards).

**Classification tree Parthenogenesis tree Mechanism**  
Ovaries produce oocytes (egg cells) from precursor cells by meiosis and the production of three polar bodies (meiotic byproduct). In the case of sexual

reproduction, these polar bodies degenerate as humans but in other organism's ovum fuse with polar bodies and lead to the production of a zygote as in meiotic parthenogenesis.

The ovum fuse with the second polar body, and there is genetic diversity in the next generation. These offspring will be diploid, as in the case of automixis.

There are few conditions concerning the fate of offspring:



**Arrhenotokous:** Parthenogenetically development of male from unfertilized eggs

**Thelytokous:** Condition of female development from an unfertilized egg via parthenogenesis

**Deuterotokous:** Condition in which an unfertilized egg can develop into either male or female.

Insects can reproduce in sexual and asexual ways under favorable conditions. They undergo an asexual way of reproduction and expand their population rapidly. While under harsh or unfav-

orable conditions, the insect undergoes sexual reproduction, produce eggs that can survive in harsh conditions, and develop to hatch during favorable conditions.

Asexual reproduction is advantageous for expanding the insect population shortly, and sexual reproduction enhances genetic diversity.

Some insects, like honeybees, undergo sexual reproduction to

food and shelter.

They reproduce their offspring under favorable conditions for better growth and survival success. For example, aphids undergo parthenogenesis in summer, when many green leaves are available and the days are long.

Parthenogenic animals reproduce two times faster than their sexual reproduction and quickly increase population size without fertilization. Females that reproduce by parthenogenesis can produce the same number of offspring as sexually reproduced females but with only half the size of the population, saving more resources.

The parthenogenic female can produce a colony without the demand of males, and most female offspring may grow quickly and reproduce new offspring within a short time.

Moreover, some parthenogens can maintain the ability to incorporate new genes during the cycle of sexual reproduction. Therefore, they can maintain their evolutionary process while producing many offspring.

Sexual reproduction does have greater genetic diversity than parthenogenesis. However, it may prove beneficial because it produces clones with the same genes inherited from their parents for favorable traits. So, if the mother lives in a habitat she has adapted to, her offspring will carry the same genes to ensure survival in such an environment.

Nowadays, parthenogenesis is tested via egg stimulation in humans for the development of parthenogenic individuals...[Read More](#)



Faran Muhammad

*The herbicide resistance is becoming a serious issue in whole world, it is becoming mandatory for farmers to evaluate the resistance of weeds and understand the way to manage the resistance. Researchers have discovered various resistance determining methods for multiple herbicides and varieties of weeds*



## Dose Optimization And Resistance By Seedling And Seed Assay Through RISQ Test In Phalaris Minor

**P**halaris minor (little seed canary grass) is vastly occurring weed in winter crops, while it is abundant in the areas producing wheat which are the fields of Pakistan, India, Nepal and Bangladesh (Singh, 2007).

The seeds of Phalaris minor are abundantly present in upper layer of soil up to 5.0 cm and the number of seeds reduced as we go to the deeper layer (Om et al., 2002). According to Franke et al., (2002) seeds of little seed canary grass were comparatively same in upper 10 cm layer of soil in no tillage and traditional tillage practices. It is because of regular tillage practices and only rice cultivation in puddled soil.

According to Yadav (2002) the germination tendency of Phalaris minor at 6.0 pH was highest but there were remarkable decrease in germination in higher and lower pH than 6. However there was zero germination at 3.0, 9.0 and 10.0 pH. The dormancy period in Phalaris minor was lower than 2 months in normal field circumstances because the seeds obtained in soil of infected field survive till the last of May revealed about 80 to 96 percent germination (Om et al., 2004).

Significance of Phalaris minor and other weeds

Weeds are actual enemy of crops, the weeds inhibits the functions of plants and also effect the growth and development. Almost 34% reduction in the crop yield is due to the weeds in various crops cultivated in whole world. The reduction in yield is greater than the yield loss due to the weed as compared to the other invaders in these crops. Adequate weed

control is required to avoid the highest reductions of crop yield because of the weed intensity. Variety in weed control measures enables the reduction of developing resistance in weeds. Allelopathy is now days also being used as an important measure to control weeds, it can significantly apply to fight against the difficulties caused by the evolving pollution and the property of resistance in weeds (Jabran et al., 2015).

Among various weeds which effect the wheat crop, Phalaris minor Retz. (Little seed canary grass) exists as an alarming problem for a healthier wheat and good yield. This fast growing weed in winter crops is now discovered in almost sixty countries of world (Travlos, 2012). This weed is most influential in wheat crops of many countries (Pakistan, Bangladesh, India, Iran and Nepal). It is becoming a crucial issue in Rice and Wheat crops in Asian cities (Hussain et al., 2015). The loss in wheat yield because of canary minor ranges in 25 to 50% of the total (Chhokar and Sharma, 2008).

A severe parasitism in 2000 to 3000 plants of crop per meter square can be a cause of whole crop destruction (Chhokar et al., 2006). The infection in 40 plants per meter square can decrease the growth and yield of crop specially wheat up to 28 to 34% (Hussain et al., 2015). Phalaris minor is similar to wheat plants in physical characteristic, so it is difficult to control in early stages, which became a cause of more growth weed and it also became even difficult to kill by biological methods (Abbas et al., 2016a; Abbas et al., 2016b).

During studying the issue about the crop loss by arising

problem of Phalaris minor because of the evolution of resistance property in herbicide, in the Editorial of Indian Society of Weed Science Newsletter a few lines are written in these words, "It also focuses over holowness in our research for we know very little about the biology and ecology of Phalaris minor the weed which has been with us for over three decades" (Anon, 2000). The genetically inherent capability of a weed to thrive and develop even after the application of a specific quantity of herbicide, which is usually hazardous for a non-resistant type (Heap, 2000).

In expensive and capital consuming agricultural practices worldwide, cultivators scarcely manages the weeds in an active way to control or stop weeds before germination this process usually delayed by them. Usually the growers only manages the weeds proactively when the weeds became resistant towards applied herbicides, otherwise the weed management and control by chemical is considered to be most effective way to control weeds. The herbicide resistance in various varieties of weeds is due to the application of same group of herbicides is the premium reason for the amendments in weeds management techniques and selection of the cropping routine that lessen the evolving resistance in weeds. The efficiency and selection of chemical and integrated techniques and methods for the pre-germination and after germination control of weeds having resistant property were evaluated. Techniques involve the system of cropping, sequence, chemicals, dose applied, mode of action of herbicides and the

extent of herbicide resistance in crops. Zero chemical weed control methods Non-herbicide weed-management practices or the application of herbicide prior to the germination in field, use of any rarely used herbicide and alternative cropping system are a few reasons for reducing the increasing herbicide resistance in weeds. It will surely help to reduce the capital loss crop due to herbicide resistant weeds (Beckie, 2006).

Elevating resistance in herbicides

The herbicide resistance is becoming a serious issue in whole world, it is becoming mandatory for farmers to evaluate the resistance of weeds and understand the way to manage the resistance. Researchers have discovered various resistance determining methods for multiple herbicides and varieties of weeds. The producers require instant results while the researchers are fighting with the difficulties arising due to the huge verities of samples and rapidly increasing resistance of herbicides. Researchers developed Quick tests and performing them, these Quick tests are developed to tackle the need but the classical testing is still the part of culture. The latest techniques include molecular techniques. While the traditional whole-plant assay tests for resistance evaluation is performed despite of a lengthy procedure, various quick tests have drawbacks such that they are specific for any weed or herbicide resistance. The progressing research in the biology of weeds and gene study aids the improvement in collection of samples and testing techniques. Hence, there is continues improvement

and diversification in resistance evaluation methods, that can stuns the unexperienced researchers, the study was done to support the field workers of weed sciences to settle the problems which are becoming the barrier in determining the resistance of herbicide in weeds. From field detection, collection of samples, selection of herbicides, tests the herbicides, analysis of data and finally the implementation. More over the study specifically defines the protocols for collecting plant for resistance confirmation assays, describes suitable summaries on the anatomical and mathematical methods for managing and performing dose-response experiment and describes possible methods for quick confirmation of resistance, also containing the molecular-based assays. The techniques for confirmation of resistance usually require to be changed a little to become fit for a specific herbicide or weed under test. Hence the main necessities and also the procedures and conclusions of DNA-based assays are alternative to each other. Finally, the resistance in weeds testing results also the conclusions from the research should be applicable, practical and based of scientific techniques (Burgos, 2013).

RISQ Technology Herbicide resistance in weeds is a main issue crop and herbicide cycle is not present or very less used. While there are yet some real possibilities for the deduction of selection pressure in resistance populations. Alternate use of herbicides, combination of herbicides, alternation of crops and other agricultural techniques like early sowing of crop, good varieties and higher rate of seeds can

give crop the ability to fight with weeds (Cavan et al., 2000). Phalaris minor is the terrible problem of the wheat it create the competition with wheat for nutrition of soil, fertilizer, area and in other aspects, although many researcher done many research on the Phalaris minor by using Isoprotroun, fenoxaprop-p-methyl, diclofop-methyl, clodinafop propargyl, pinoxaden, iodosulfuron + meso-sulfuron and other herbicide used for control the Phalaris minor, they used the these herbicide single way and the also used in mixture form ,but now the Phalaris minor got resistance against these herbicide. one of the best approach to the resistance of the weed against the herbicide is the RISQ resistance in seasonal quick method this method is specially used against the grasses species like the Phalaris minor, in RISQ classical method, seed assay, seedling assay, leaf assay and other approach are include in the RISQ. Seed assay and seedling assay was the best way to check the resistance of Phalaris minor this was used to check the resistance and saved the loss of yield of wheat because for this approach required less days to the resistance of weed and best herbicide used for kill the weed .in seed assay and seedling assay appropriate dose fenoxaprop p methyl find out for Phalaris minor. Significance of Wheat

Phalaris minor is considerably very hazardous and problematic weeds of wheat cropping system in Pakistan. There are certain features like structural resemblances with the wheat plant, capability to resist tillering practices, yield of more than one seeds on a plant...[Read More](#)



Muhammad Usama

*Pyrolysis is the combustion of biomass in the absence of oxygen resulting in the decomposition of the organic matter with syngas and biochar on the other hand gasification use limited amount of oxygen and high temperature to convert the biomass to biochar but the mostly used technology for producing is the pyrolysis*



## Biochar: A Key Solution To Agricultural Waste And Boosting Farm Economy

Muhammad Usama  
Rasheed, Athar Mahmood,  
Maria Naqve

**P**akistan being an agriculture-based country with a large number of hectares of growing and generating a large number of wastes related to agriculture.

The solid waste generated from crop residues constitutes about 82.12 million tons annually with a huge amount of over 365 million tons annually. In recent last decades, the agricultural pollution enhanced many times contributing more towards environmental pollution and hazards such that burning Rice stubbles in huge amounts contribute as a source of smog which is a serious problem for human and animal health. The solution to such types of problems lies in generating new technologies to cope with the waste produced by agriculture i.e., Biochar. As a new emerging clean environment

technology biochar not only reduce the agricultural waste problems but also reduce the cost of production of crops by enhancing the soil fertility and reducing use of in-organic fertilizers.

Biochar is a diverse material rich in charcoal like substances and helps to reduce carbon from the atmosphere by adding carbon and minerals nutrients to the soil. The basic concept of biochar is that plant and animal waste contain a large amount of Carbon ranging from 45-60% and Oxygen about 35-40%. The other elements such as hydrogen, nitrogen and minor amounts of minerals. Basically, when biomass burned and deteriorated a lot of minerals leached down and carbons diffuses into the air which cause environmental problems that can be addressed using biochar. There are two different methods of preparing biochar i.e., pyrolysis or gasification system. Pyrolysis is the combustion of biomass in the absence of oxygen resulting in the decomposition of the

organic matter with syngas and biochar on the other hand gasification use limited amount of oxygen and high temperature to convert the biomass to biochar but the mostly used technology for producing is the pyrolysis. The biochar is high resistive to decay for 100-1000s of year for wood biochar and act as a continuous supply of nutrients and carbon which acts a potent source. For soils like Pakistan where temperature and low amount of organic matter is present use of biochar can act as an energy booster to the farm. The biochar is prepared by the incomplete digestion of the biomass and which adds carbon in stable form to the soil. In this way removing of carbon from carbon cycle. The biochar alkaline reaction reduces the soil acidity. The application of biochar is increasing day by day due to the prospective of increasing soil nutrient holding capacity and water retention and also store sustainably the carbon and thereby control of greenhouse gases.

This helps in mitigating climate change and converts a huge amount of waste to a useable resource. Biochar reduces soil density and soil hardening, increases soil aeration and cation-exchange capacity, and changes the soil structure and consistency through the changes in physical and chemical properties. It also helps to reclaim degraded soils. It has shown a greater ability to adsorb cations per unit carbon as compared to other soil organic matters because of its greater surface area, negative surface charge, and charge density, thereby offering the possibility of improving yields. Samples with a sufficient amount of stable carbon can be added to the soil to be sequestered to a high adsorption surface of biochar can characterize it as a soil additive, competent of halting risk elements in soil. The controlled amount of burning does not go towards the loss of nutrients rather it is help full to produce a material healthy for soils and microbes. The energy

generated in the combustion process is offset substantial for the climate and environment as it is controlled. For instance, if all the Indonesian rice is converted to biochar and incorporated into the soil it will be equal to the whole of Norwegian CO2 emission. During the production of biochar some incomplete products may also formed which includes volatile hydro-carbons that acts as a pollutant to the human and environment.

The constraints related to biochar in Pakistan is related to the use of farm waste as an alternative source of energy for fuel and as a source of low-quality animal feed. The process of making of biochar is quite complicated and the high transport cost makes reluctant to the farmers to adopt such technologies. Despite all the benefits associated with the biochar there is very less or no attention to it as compared to the developed countries which are generating new resources and controlling environmental pollution and climate change.

Recently the President announced 10 units of biochar where farmers can sale their crop residues and instead of burning can take money. The Research done on biochar is not conveyed to field levels. All the institutes of the country should gather at a platform to make the things happen. Biochar is a complete package of resources for the developing world as the developed world is moving towards the sustainability and the resource generated high yielding agriculture needs higher inputs on sustainable bases to feed large amount of population. The reduced climatic effect will provide efficient and better health for the farmers and the family in limiting resources.

The by-products formed during the combustion helps in generating the environmentally friendly fuels when consumed do not affect the environment and climate that much. Although biochar is a very good technology but farmers are reluctant to do it because of the lag present between research and information.



## Team Three Musketeers From APU Win Data Science Challenge

Computer science undergraduates specialising in data analytics were supervised by the varsity's School of Computing lecturer Mafas Raheem.

MALAYSIA Techlympics 2022, the country's largest initiative to develop young talent in science, technology, and innovation, saw Team Three Musketeers from Asia Pacific University of Technology & Innovation (APU) win the Data Science Challenge.

Computer science undergraduates specialising in data analytics, Chan See Mun and Lai Mei Sim were supervised by the varsity's School of Computing lecturer Mafas Raheem.

The team embarked on the Data Science Challenge by taking up a data exploration task and studying a complex dataset to understand the relationships between the variables.

The 22-year-olds outmanoeuvred teams from Universiti Teknologi Malaysia and

Monash University Malaysia with "Path to Net Zero", a solution formulated after a 24-hour datathon that aimed to reduce global greenhouse gas (GHG) emissions using the latest technology. Organised by the Science, Technology and Innovation Ministry (Mosti), the competition saw Team Three Musketeers taking home a cash prize of RM7,000.

The dataset which was captured from the online platforms of collection of key metrics - Our World in Data and Climate Watch Data - contains the societal information of each nation from 1990 to 2019, said Mafas in a recent press release.

The dataset, he explained, set a narration to address the importance of modern industry's contribution to a country's economy and filling the needs of people's energy consumption.

"However, as modern industry causes a lot of GHG emis-

sions, optimal solutions should be proposed for sustainable economic development," Mafas said, adding that Chan and Lai then came up with an interactive and comprehensive dashboard which allows a full understanding of the carbon emission situation.

They identified obstacles to achieving the net zero emission target and proposed target solutions for the identified problems. "We emphasised the ways to reduce GHG emissions through afforestation, reforestation, negative emission technologies, and hydrogen energy," said Chan, who is in her second year of studies.

The Techlympics 2022 finals, held on Nov 26 and 27 in Bukit Jalil last year, saw 10 teams competing intensely. According to Three Musketeers, the Data Science Challenge was fierce since there were many undergraduate teams from public and private universities that provid-

ed impressive solutions. Lai, a final year student, said the key to the team's win was good synergy, and experiences and skillsets developed in the course of their studies.

"We spent the first two hours exploring and brainstorming to determine the direction of the project before dividing the work to execute it. With the uncertainty of whether our solution met the requirements of the competition, the next 22 hours were us bouncing between joy, struggle, diligence and self-doubt. During the most exhausting times, it wasn't about the prize anymore; rather, it was the conviction to complete the project that kept us going," she shared.

Mafas said the girls relied on their experience participating in other competitions, especially the Asean Data Science Explorers (ASEANDSE) 2022, in which they emerged among the top 15 teams...[Read More](#)

## Taylor's Launches Innovative Programs To Meet Demand For Digital Talent



The Bachelor of Interactive Spatial Design offers two specialisations, Smart Homes Design and Smart Environment Design with three learning track options.

Taylor's University launches Malaysia's first innovative programs, the Bachelor of Interactive Spatial Design (Honours) and Bachelor of Science (Honours) in Sustainable Digital Construction Management, to produce future-ready graduates to meet the demand for digital talent.

Taylor's University Faculty of Innovation & Technology Executive Dean, Professor Dr. David Asirvatham, said the innovative programs are complemented with Southeast Asia's world-class future of extended reality (XR) learning center, Taylor's Virtual Online Future Technology & Extended Reality (VORTEX XR Lab).

The Bachelor of Interactive Spatial Design offers two specialisations, Smart Homes Design and Smart Environment Design with three learning track options to choose from - conventional internship, work-based learning experience with industry partners such as FrameMotion Studio Sdn Bhd, Virtual X Malaysia, Ministry XR, HONOR and IMT Smart Home, or the technopreneurship mode for students to start a business with mentorship by Taylor's University's entrepreneur start-up incubator, BizPod.

The Smart Homes Design specialisation produces designers to create a personalised smart living space that can operate automatically, catering to individual needs and living styles, while the Smart Environment Design specialisation designs experience to change the way we interact with products and consume information using spatial technologies...[Read More](#)

## TM, ZTE Collab To Work On Passive Optical Network Research



TM recently signed MoU with ZTE for joint research in areas of next-generation PON to enhance bandwidth experience for users in Malaysia.

TELEKOM (M) Bhd (TM) and ZTE (M) Corp Sdn Bhd are planning to collaborate on passive optical network research to bring the first 50 gigabytes per second (Gbps) bandwidth experience to Malaysia.

In a statement today, TM said its innovation arm, Telekom Research & Development Sdn Bhd (TM R&D), recently signed a memorandum of understand-

ing (MoU) with ZTE, a global provider of information and communication technology solutions, for joint research in the areas of next-generation passive optical networks (PON) to enhance bandwidth experience for users in Malaysia.

The MoU was signed by TM R&D CEO Sharlene Thiagarajah and ZTE Malaysia CEO Steven Ge. Under the agreement, TM R&D and ZTE will jointly explore the capabilities of next-generation Passive Optical Network access technology, 50GPON...[Read More](#)

## Mazlan Othman, Malaysia's First Astrophysicist Professor

Mazlan Othman had been invited by Ambong-Ambong co-founder to talk about space exploration and humanity's place in the cosmos to in-house guests.

One of the first questions Mazlan Othman remembers asking as a nine-year-old was: Why is Mother Teresa going to hell? The reply she got - that the India-based Albanian humanitarian was not a Muslim - stunned her. "I was like, what? It was injustice and I used to rebel against all that."

Years later, she would learn that Islam is progressive and accommodating. In fact, Jewish and Christian scientists in bygone days found refuge in Islamic countries, which advanced because of science.

Over breakfast at Ambong Pool Villas in Langkawi, Mazlan Othman, the nation's first astrophysicist, pauses to accept pineapple juice offered by one of the wait staff - "I like it; it has antioxidants" - and lets on that she basically eats what she likes, whenever she likes. "I have no dietary limitations. I know what's good for me but I don't usually do it," she laughs.

When she trains to climb mountains, though, she follows a strict exercise programme. Her last climb was in 2019, to Gokyo Ri, a 5,300m peak in the Khumbu region of Nepal. There was a subsequent trip but she missed it because "I was 5kg overweight. I still am".

Eleven years ago, she had both knees replaced when her orthopaedic surgeon suggested a long-term solution to the pain. "I was running too many marathons and he had been injecting fluid for three years. I thought surgery was logical and for the best. It was not about the body; it's about the mind."

The conversation with Mazlan Othman moves easily from one topic to another, a delightful reflection of her varied interests. For a start, the titles preceding her name are a mouthful - Professor Emerita Tan Sri Dr. - but she shrugs them off with ease at the resort named after the mer-ambong...[Read More](#)

## PESB Awards US\$5.7M Grant To Malaysian Biotech Startup



"With this support, Biogenes, a Malaysian biotech startup will invest into a medical-grade manufacturing facility, advancing

our technology portfolio," said Tang KM.

Biogenes Technologies Sdn Bhd (Biogenes), a Malaysian

biotech startup, has bagged US\$5.7 million for its Series A funding from Pembangunan Ekuiti Sdn Bhd (PESB), according to a January 18 press release.

The fresh funds from PESB will go towards expanding Biogenes' proprietary technology platforms across Southeast Asia, namely the Philippines and Indonesia where Biogenes has signed collaboration agreements.

"With this support, Biogenes, a Malaysian biotech startup will invest into a medical-grade manufacturing facility, advancing our technology portfolio," said Tang KM...[Read More](#)

## Sabah's Young Scientists Use Seaweed To Replace Plastic Packaging



Students from the MARA Junior Science College in Semporna decided to fight plastic with plastic - a different one, though, made from seaweed.

One of the fastest-growing organisms on Earth, seaweed is a sustainable material to use as a replacement for plastic packaging. It is biodegradable in about four to six weeks.

In Semporna and other parts of the scenic state of Sabah, residents have watched their beaches and coral reefs gradually disappear wrapped in discard-

ed plastic, and animals dependent on the ocean for sustenance poisoned and disfigured as they swallow the indigestible litter.

Aware of the conveniences plastics offer and the impossibility of phasing them out from our lives, students from the MARA Junior Science College in Semporna have come up with a way to counter the pollution problem:

They decided to fight plastic with plastic - a different one, though, made from seaweed, that does not harm marine species...[Read More](#)

## KKMNow Portal Reports 142 Covid-19 Infections On Monday

According to the ministry's GitHub data repository, this is the first time the daily COVID-19 case count has fallen below 200 since September 30, 2020.

The Health Ministry's KKMNow portal recorded that 141 of Monday's COVID-19 infections were locally transmitted, with one imported case. According to the ministry's GitHub data repository, this is the first time the daily COVID-19 case count has fallen below 200 since September 30, 2020.

Malaysia discovered 142 new COVID-19 infections on Monday (Jan 23) bringing the country's total number of cases to 5,034,972 since the pandemic began. The KKMNow portal reported that 267 people recovered from COVID-19 infections, bringing the total number of recoveries in the country to 4,987,828.

As of 11:59 p.m. Monday, Malaysia had 10,212 active COVID-19 cases, with 9,859 (96.5%) observing home quarantine and 337 (3.3%) seeking treatment in hospitals.

KKMNow also reported that as of 11.59 p.m. Monday, 16 COVID-19 patients were being

treated in intensive care units (ICU), with 11 requiring ventilator support. According to the portal, Malaysia's current nationwide hospital utilisation rate is 64.5%, with an ICU utilisation rate of 61.1%.

A GitHub data repository is a collection of files and folders that are stored on the GitHub platform and can be shared with others. Data repositories can include a variety of file types such as CSV, JSON, and Excel spreadsheets, as well as scripts and code that can be used to analyze or manipulate the data.

Data repositories can be public, allowing anyone to view and

download the files, or they can be private, requiring permission to access. GitHub also provides tools for collaboration, such as the ability to submit pull requests and track changes to the files in the repository.

KKMNow is a portal or website that provides information and services related to the Ministry of Health Malaysia (KKM). It is a one-stop platform for the public to access information on health services, health facilities, and health programs offered by the KKM. It may also provide online services such as appointment booking and registration for health programs.

