NAVSARI AGRICULTURAL UNIVERSITY

CAET
2024

तरंग

College of Agricultural Engineering and Technology
Navsari Agricultural University
Dediapada, Dist.-Narmada (Gujarat)-393040. INDIA

Wave of Victory

CAET-2024

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Dr. Z. P. Patel
Vice Chancellor

MESSAGE

The College of Agricultural Engineering & Technology, Dediapada and Polytechnic Agricultural Engineering, Dediapada, Navsari Agricultural University, are the prestigious institutions in the state of Gujarat, which imparts education in the field of Agricultural Engineering. The institutes are making a steady progress to achieve its vision and missions. The engineers (under graduates, graduates and post graduates) of the colleges have significant contribution in the sectors like Agricultural Engineering Education, Research and Extension in the areas of manufacturing agricultural implements, agricultural processing, water conservation and irrigation, development of renewable energy technologies, banking sector as well as government, semi government, NGOs and private organization or companies etc., They are providing academic, technical, professional and managerial input to the university and outside.

Agricultural Engineering, is very important especially for reducing the cost of cultivation, providing better work efficiency with comfort, safety and reducing the drudgery, increasing agricultural production, water harvesting, ground water recharge, irrigation technology, precision farming and value addition through processing activities, ultimately increasing the farmer's income. The college is putting best efforts to train graduating youth who will play a vital role in technological inputs required in Agricultural sector.

At last, it is my proud privilege to encourage the budding engineers of NAU, which is one of the highly ranked institutions of the State and Nation to move ahead with confidence and conviction to achieve desired heights in professional growth. I congratulate the students, teachers and technical staff for bringing out the College Magazine 2024 showing the literary prowess of Agricultural Engineers.

Place : Navsari
Date : 17.02.2025

(Z. P. Patel)

NAVSARI AGRICULTURAL UNIVERSITY
Eru Char Rasta, Navsari - 396450
(Gujarat) India

Prof. Jaimin R. Naik
Director of Students' Welfare

MESSAGE

Nurturing creativity and inspiring innovation are two key elements of a successful education and "Tarang-2025" is the perfect combination of both. It harnesses the students' creative energies and instils the essence of their inspired imagination brilliantly. Agricultural Engineers play a vital role in country building. In the present era when water has become a challenging issue, the technologies viz; drip irrigation and sprinkler irrigation have great importance in obtaining better crop production with maximum water use efficiency. We have excellent potential to grow in diversified areas and excel in Agricultural Engineering.

College of Agricultural Engineering & Technology and Polytechnic Agricultural Engineering, NAU, Dediapada have a rich tradition of producing trained Agricultural Engineers since their foundation in 2013 & 2009 respectively.

I take this opportunity to congratulate Dr. P.K. Shrivastava, Principal & Dean and all the members of the SRC and contributors for bringing out this magazine, which itself is an achievement considering the efforts and time required. May all our students fly high in uncharted skies and bring glory to society and their profession with the wings of education.

I wish all the success and hope that this tradition set by the current students will be carried through by the successive generations of students to come.

Place : Navsari
Date : 17.02.2025

(Jaimin R. Naik)

COLLEGE OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
&
POLYTECHNIC AGRICULTURAL ENGINEERING
NAVSARI AGRICULTURAL UNIVERSITY
PARSI TEKRA, DEDIAPADA, DIST. NARMADA-393040
(GUJARAT) INDIA

Dr. P. K. Shrivastava
Principal & Dean

From Principal's Desk....

It gives me immense satisfaction to put forth the literary activities of the College of Agricultural Engineering and Technology (CAET) and Polytechnic in Agricultural Engineering (PAE) in the form of College Magazine "Tarang". The campus of Agricultural Engineering is like a *Gurukul*, located in calm and serene surroundings of Narmada district, ideal place for students to pursue their passion and nurture hobbies in addition to regular studies. The college has state of art laboratories, equipment's, library, play grounds and all the essential facilities including internet connectivity which helps to connect any part of India and world. Although the student strength of both the institutions is around 100 but the enthusiasm and focus helps them to compete in nearly all activities, with their compatriots studying in cities. I must appreciate the zeal and sense of responsibility of limited faculty members and staff for their dedicated services in nurturing young boys and girls in their formative years. Intellectual inputs provided by students and staff for the magazine are noteworthy and deserves recognition. I congratulate Dr Hitesh Sanchavat and his team for taking pains in bringing out the College Magazine which will be a good souvenir and remembrance of students. I would end with the shloka of Gita applicable to all of us in the pursuits of life.

श्रेयान्स्वधर्मो विगुणः परधर्मात्स्वनुष्ठितात् ।
स्वधर्मे निधनं श्रेयः परधर्मो भयावहः ।। 35।।

(Gita 3.35 It is far better to perform one's natural prescribed duty, though tinged with faults, than to perform another's prescribed duty, though perfectly. In fact, it is preferable to die in the discharge of one's duty, instead of following the path of another, which is fraught with danger.)

Place : Navsari
Date : 17.02.2025

(P. K. Shrivastava)

Place : Navsari
Date : 17.02.2025

COLLEGE OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
&
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PARSI TEKRA, DEDIAPADA, DIST. NARMADA-393040
(GUJARAT) INDIA

Dr. S. H. Sengar

From the SRC Chairman's desk....

It gives me an immense pleasure that College Magazine "Tarang" is going to be published in this year 2024. This intellectual activity gives platform to the students of their technical faculty to be human, in a sense, to get opportunity to express their ideas, thoughts and feelings in a stipulated way.

I appreciate the efforts of those students who have contributed in this magazine, in spite of their valuable busy schedule in semester system.

I also congratulate Dr. Hitesh Sanchavat, SRC Chairman, PAE and members of Editorial Board. Its pleasure to say college published first SRC magazine- **"Tarang 2k24** under valuable guidance of Dr. P. K. Shrivatava, Principal & Dean, CAET , Dediapada.

I hope the magazine will show the output of the students and will serve them in remembering their golden days in the institute.

Place : Dediapada
Date : 17.02.2025

(S. H. Sengar)

COLLEGE OF AGRICULTURAL ENGINEERING AND TECHNOLOGY
&
POLYTECHNIC AGRICULTURAL ENGINEERING
NAVSARI AGRICULTURAL UNIVERSITY
PARSI TEKRA, DEDIAPADA, DIST. NARMADA-393040
(GUJARAT) INDIA

Dr. Hitesh Sanchavat

From the SRC Chairman's desk....

It's providing privilege that Faculty members of Polytechnic Agricultural Engineering and College of Agricultural Engineering & Technology, Dediapada are part top ranked University i.e. Navsari Agricultural University in the country & top University in Gujarat. Though the initial years of formation the college, proud to say that college has to great risen of success and today it is seen one of the best institute of Gujarat. It has become synonymous with academic excellence, bench mark of major co-curriculum excellence & also a centre which creates responsible quality graduates. We are very grateful to Hon. Vice Chancellor Dr. Z P. Patel for his valuable guidance, encouragement and support through which all this has become possible. Its pleasure to say college published first SRC magazine- **"TARANG"** under valuable guidance of Dr. P. K. Shrivastava, Principal & Dean, CAET & PAE, Dediapada. Here I express my view as:

Dream Dream Dream
Dream transfer in thought
Thought transfer into action
Action resulted in beautiful form of
TARANG-2K24

Place : Navsari
Date : 17.02.2025

(Hitesh Sanchavat)

Place : Navsari
Date : 17.02.2025

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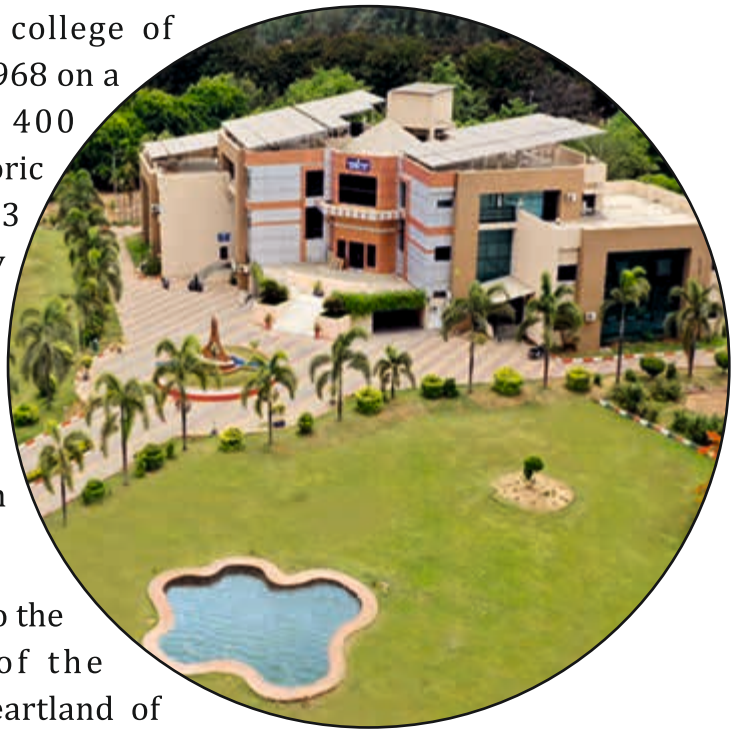
About the University...!!



Commencing with a college of agriculture established in 1968 on a sprawling farm land of 400 hectares located on the historic road of Dandi March around 3 km from Navsari railway station and 8 km from the National Highway No. 8, the Navsari campus gained the status of a separate Agricultural University with effect from May, 1 2004.

The university caters to the needs of the farmers of the plantation crops in the heartland of Gujarat, the Kanam zone of cotton, sorghum and pigeon pea and hill millets in tribal belt. Besides, the area is also well known for its forest tree species like teak, *Khair*, *Kalam* and bamboo. To provide technological backup for the agricultural development in its domain of the Navsari Agricultural University has four fully developed faculties of Agricultural Engineering, Agriculture, Horticulture and Forestry; two Zonal Research Stations (Navsari and Bharuch); three main crop based research station (Cotton, Sorghum and Mango), three regional research station (Waghai, Vyara and Gandevi) and six verification/testing centres. The extension component includes five *Krushi Vigyan Kendras* (Waghai, Vyara, Navsari, Dediapada and Surat), *Sardar Smruti Kendra* (Navsari). Agricultural Technology Information Centre (Navsari). Agriculture Educatorium (Navsari), Tribal Women Training Centre (Dediapada), Agro 1.T.1 (Navsari) and a Training & Visit scheme (Navsari).

This University also offers Diploma courses in Agriculture at Waghai, Vyara and Bharuch; Horticulture at Navsari and Paria and Agricultural Engineering at Dediapada. The short duration certificate courses on Bakery; Land scaping & Gardening are also run for rural youths by the University at Navsari. Under the tribal development plan in south Gujarat, College of Agricultural Engineering was established and it is progressing as one of the flag bearers of the University.

The College of Agricultural Engineering and Technology was established by Navsari Agricultural University in 2012-13 at Dediapada with an aim to ignite interest towards education and scientific temper among the tribal community residing in the Narmada district of South Gujarat. Agriculture still remains the back bone of Indian economy mainly because of existing bio diversity in various agro climatic situations of the country. The nation is contesting to become the third largest economy surpassing Japan and Germany by 2027, in addition to feeding its own burgeoning population which stands at 1.45 billion, with the tag of the most populous country, from limited natural resources and climatic challenges. Indian Meteorological Department, IMD predicted normal monsoon in 2024, due to which the

estimated food grain production in 2024-25 is around 340 million tonnes, with forecasted wheat production of 112.5 million metric tons (MMT) and rice production of 135 MMT. Globally India remains a significant player in food production contributing to the global food security. The real challenges are to sustain these productivity levels for food and nutritional security while providing employment opportunities to the youth. India has more than 50% population below 25 yrs of age and more than 65 % below 35 yrs of age. Whereas, as per the International Labour Organization (ILO) estimates of 2022, agricultural sector provided employment to 42.86 % of the total employment in India, whereas contribution of agricultural sector on Indian economy is only 18%. The investment in Agricultural Education and Research specially in Agricultural Engineering is still meagre as per the attention it draws in the developed world, where there are diminishing boundaries between various faculties of Agriculture achieving higher productivity levels.

The potential of Agricultural Engineering in most of the states of India still remains under-utilized, the productivity of most of the crops have been reaching maximum achievable limits under the given set of agro climatic situations and soil conditions, even with the adoption of all the technological improvements if Agriculture through crop varieties, fertilizer doses, plant protection measures and agronomical practices. To achieve still higher growth rates, application of Agricultural Engineering technologies from pre sowing operation to post harvest technologies remains the only option for the country. Within the nation, the leading states in Agriculture sector are utilizing the potentials of Agricultural Engineering in various ways.

Agricultural Engineering education empowers students to deal with Farm Mechanization, Water Conservation, Irrigation and Drainage, Watershed Management, Food Processing and Post-Harvest Technologies, Non-Conventional Energy Sources, Farm Structures and all basic courses of Engineering as well as Agriculture. A skilled engineer is always in demand in private sector, Non-Government Organizations (NGO), working on watershed issues. Use of drones, operation and maintenance of drones, Artificial Intelligence, use of Sensors, remote application of irrigation, use of satellite imageries for estimation of crop loss, damage, diseases using GIS software's are very much in the domain of Agricultural Engineering. Job avenues are always there in industries dealing in tractors, farm machinery, processing, food packaging, and irrigation industries. Young Turks having their own farmlands may also empower themselves to get initiated for becoming entrepreneurs and modern farmers. In addition to classroom education, students get the opportunity to work in the state of art laboratories, field trips, educational tours. The college nurtures the hobbies of students by facilitating them to take part in sports and games, cultural activities, debates and literary events held round the year. Sincere and hardworking young students having interest in farming should avail the opportunity of technical education in picturesque and calm surroundings of Dediapada.

Aims and Objectives of SRC

The Student Council exists to represent the voice of the students, promote their ideas and advocate their views and interests. It is a fundamentally democratic and non-political institution, with all students given equal opportunity to participate. Its role includes helping the college to serve its students as effectively as possible and making students aware of wider issues, in addition to playing an important role in establishing links with the community.

1. Building college spirit by encouraging students to participate in college activities.
2. Supporting the director of student welfare of the college's student body as a whole.
3. Providing an environment for students to ascertain and discuss student opinions.
4. Developing relationships and supporting the activities of other groups within the colleges
5. Creating leadership opportunities for students in both the junior and senior in colleges
6. To create a positive college atmosphere of mutual respect between staffs and students
7. Establishing links with the local community through different activities of these colleges.

Noteworthy Happenings in CAET Campus during 2024

- Jay Chaudhari has been awarded with the Vice- Chancellor's Gold Medal of 2022-23 on the basis of Overall Grade Point average and performance in extracurricular activities for the degree of B. Tech (Agricultural Engineering).
- Ponkiya Harshilkumar Vrajlal was awarded Dr.V.J.Patel Gold Plated Silver medal of 2022-23, for the Highest OGPA for the degree of B. Tech (Agricultural Engineering).
- Patel Ayush received Vice- Chancellor's Gold Medal of 2023-24 on the basis of Overall Grade Point average and performance in extracurricular activities for the degree of B. Tech (Agricultural Engineering).
- Donga Arpit Prakashbhai was awarded Dr.V.J.Patel Gold Plated Silver medal of 2023-24, for the Highest OGPA for the degree of B. Tech (Agricultural Engineering).
- Ray Jagrat Bharatbhai for the Gold medal in Polytechnic Agricultural Engineering on the basis of Overall Grade Point average and performance in extracurricular activities
- Polytechnic Agricultural Engineering Student Ray Jagrat felicitated with trophy for winning University level *Surya namskar* Championship among all Navsari Agricultural University participate.
- Dr. Hitesh Sanchavat, Head FMPE, CAET, NAU, Navsari awarded by "Best book Author Award" "Glimpse of Agricultural Engineering" by Institutions of Technical and Scientific Research and The Institutions of Engineers (India) ITSR Foundation Award-2024 on May 19,2024 Rajasthan State Centre Jaipur.
- United Nation Environment Programme (UNEP) awarded Certificate of Appreciation to the College of Agricultural Engineering and Technology, NAU, Dediapada on the eve of world Environment Day for joining the general restoration movement and making world environment Day 2024 a huge success to restore land build drought resilience and combat desertification.
- Students and faculty of CAET and PAE Dediapada attended an insightful lecture on "Agricultural Engineering for Postharvest Handling of Fresh Produce and Agro-processing." Was delivered by Dr. Pankaj B. Pathare, Associate Professor of Postharvest Technology at Sultan Qaboos University, Oman arranged by ISAE in online mode on August 5, 2024.
- A Guest Lecture on "Status of Farm Mechanization in Gujarat and Future Prospects" to B.Tech. (Ag.Engg) and Polytechnic (Ag.Engg), on Aug. 31st (Saturday), 2024 was delivered Dr. S. K. Patel, Professor, Department of Farm Machinery & Power, College of Agricultural Engineering & Technology, CAU, Samastipur, Bihar. The lecture provided students with valuable insights into the current status and future advancements in farm mechanization, particularly in Gujarat. The session was attended by 56 students from CAET and PAE, along with 7 faculty members.
- An online Guest Lecture on "Advance Irrigation Scheduling Methods: Role of Sensors & AI" delivered by Dr. Mukesh Mehla, Post-Doctoral Research Associate, Department of Plant & Soil Science, Texas Tech University, United States of America on Aug. 14, 2024 at 8.30 AM

Dr. Hitesh Sanchavat
Associate Professor, CAET,
Navsari Agricultural University, Dediapada

अब्दुल कलाम के अनमोल विचार

- इससे पहले कि सपने सच हों आपको सपने देखने होंगे।
  English: You have to dream before your dreams can come true.
  शिक्षण एक बहुत ही महान पेशा है जो किसी व्यक्ति के चरित्र, क्षमता, और भविष्य को आकार देता हैं। अगर लोग मुझे एक अच्छे शिक्षक के रूप में याद रखते हैं, तो मेरे लिए ये सबसे बड़ा सम्मान होगा।
  English: Teaching is a very noble profession that shapes the character, caliber, and future of an individual. If the people remember me as a good teacher, that will be the biggest honour for me.
- अगर तुम सूरज की तरह चमकना चाहते हो तो पहले सूरज की तरह जलो
  English: If you want to shine like a sun, first burn like a sun.
- विज्ञान मानवता के लिए एक खूबसूरत तोहफा है,हमें इसे बिगाड़ना नहीं चाहिए।
  English: Science is a beautiful gift to humanity, we should not distort it.
- सपने वो नहीं है जो आप नींद में देखे, सपने वो है जो आपको नींद ही नहीं आने दे।
  English: Dream is not that which you see while sleeping it is something that does not let you sleep.
- महान सपने देखने वालों के महान सपने हमेशा पूरे होते हैं।
  English: Great dreams of great dreamers are always transcended.
- हमें हार नहीं माननी चाहिए और हमें समस्याओं को खुद को हराने नहीं देना चाहिए।
  English: We should not give up and we should not allow the problem to defeat us.
- मैं इस बात को स्वीकार करने के लिए तैयार था कि मैं कुछ चीजें नहीं बदल सकता।
  English: I was willing to accept what I couldn't change.
- आइये हम अपने आज का बलिदान कर दें ताकि हमारे बच्चों का कल बेहतर हो सके।
  English: Let us sacrifice our today so that our children can have a better tomorrow.
- अपने मिशन में कामयाब होने के लिए, आपको अपने लक्ष्य के प्रति एकचित्त निष्ठावान होना पड़ेगा।
  English: To succeed in your mission, you must have single-minded devotion to your goal.
- एक विचार लें और उस विचार को अपना जीवन बना लें, उसके बारें में सोचे, उसी के सपने देखें, अपने दिल एवं दिमाग को उसे पूरा करने में लगा दें, अन्य सभी विचारों का त्याग कर दें| यही सफलता का मूल मंत्र है

Entrepreneurial Opportunities in Agricultural Engineering

Ashish V. Sonawane[1] and P. K. Shrivastava[2]

[1]Assistant Professor & [2]Dean, CAET, Navsari Agricultural University, Dediapada

In recent years, there has been a notable rise in the global emphasis on entrepreneurship culture. As economies shift from regulated models to knowledge-based ones, there's a growing encouragement for individuals to initiate businesses. The term "startup" refers to the early phase of a business that incorporates science-driven innovations capable of scaling up. Essentially, all startup founders are entrepreneurs, though not all entrepreneurs found startups. Startups are emerging as platforms for realizing social goals, avenues for showcasing technological expertise, and pathways for imaginative dreamers to bring their visions to life, often leading to wealth accumulation. They are seen as pivot in propelling the Indian economy towards the ambitious target of reaching a $5 trillion GDP and achieving the vision of "Atmanirbhar Bharat" (self-reliant India).

Despite the challenges like fragmented and small land holdings, escalating input costs, climate change, lack of information regarding soil, weather, and market conditions, the agricultural sector had demonstrated resilience, maintaining growth even during the Covid-19 pandemic when other sectors floundered. In fact, its contribution to the GDP reached nearly 20% in 2020-21, marking the highest in 17 years (according to the Economic Survey 2020-21). Given the substantial size of the agricultural sector, there exist abundant opportunities to foster a more efficient, market-based agrarian ecosystem.

For Agricultural Engineering graduates, there are numerous promising avenues to explore. Some critical areas include:

1. Rainwater Harvesting: A Novel Startup Approach

Rainwater harvesting emerges as a promising solution to water accessibility challenges. By effectively capturing and storing rainwater, households can secure a free and relatively uncontaminated water source. This practice not only mitigates water-borne diseases but also empowers women by reducing time spent on water collection and enhances school attendance in rural areas. Rainwater harvesting stands as a cost-effective technique for water supply, involving the collection and storage of rainwater from roofs and ground catchments. Its applications span domestic, agricultural, industrial, and environmental purposes. Capturing surface runoff in reservoirs aids in flood and drought management, while recharging groundwater. Agricultural Engineering graduates possess the expertise in surveying, hydrological, hydraulic and structural design necessary for collaborating with various stakeholders-such as social groups, NGOs, and government agencies for designing and installing rainwater harvesting systems.

Entrepreneurs can leverage rainwater harvesting as a sustainable foundation for a profitable venture by collecting and storing rainwater in tanks or recharging groundwater. The stored water could be sold to communities for drinking and household purposes, while entrepreneurs can also utilize it for livestock and irrigation, thereby generating additional income. Agricultural engineers could also set up consulting services for design and installation of rainwater harvesting systems on turnkey basis. They could also facilitate maintenance of water harvesting units on regular basis by providing after sales services, cleaning, monitoring water quality and supply of accessories which could generate income.

2. Custom Hiring Centers (CHCs) of Agricultural Machinery

Indian agriculture is in transition from manual and animal labor to mechanical power, the importance of farm mechanization is on the rise. However, the distribution of farm power remains uneven across states,

with small and marginal farmers unable to access machinery due to economic constraints. Custom Hiring Centers (CHCs) offer a solution by providing collective ownership and rental services for various agricultural machinery. CHCs consist of a range of farm machinery, implements, and equipment tailored for custom hiring by farmers. While some tools are crop-specific, traction units like tractors and power tillers, as well as self-propelled machinery like combine harvesters, are universally used. An ideal CHC model encompasses machinery suitable for tillage operations across various crops, multi-crop equipment, and a minimum of crop-specific machinery to cater to diverse agricultural needs effectively. CHCs should ideally be situated within the radius of 5 to 7 kilometers from areas predominantly occupied by small land holdings. This strategic placement minimizes transport costs and time associated with agricultural machinery, aiming for each CHC to serve 4 to 5 villages efficiently.

The main objectives of CHS's are as below:

1. Facilitating access to farm machinery for small and marginal farmers.
2. Reducing the financial burden of individual farmers for purchase and maintain machinery
3. Increasing mechanization in areas with low farm power availability.
4. Providing hiring services for a range of agricultural machinery and implements.
5. Expanding mechanized activities, particularly in small and marginal holdings, during cropping seasons.
6. Offering hiring services for high-value crop-specific machines to enhance operational efficiency.

The farm power availability for small and marginal land holdings is at its lowest, with these holdings comprising 80% of total land holdings. Recognizing this gap, the Government of India aimed to increase farm power availability from 0.93 kW/ha to 2 kW/ha during the 12th plan period. Initiatives like the Sub Mission on Agricultural Machinery (SMAM) are in place to address this, alongside subsidy schemes encouraging entrepreneurs and agricultural graduates to establish custom hiring centers (CHCs). Agricultural Engineers could take benefit of following support mechanisms Government of India to establish CHSs.

1. Sub mission of Agricultural Mechanization (SMAM)
2. National Food Security Mission (NFSM)
3. Rashtriya Krishi Vikas Yojna (RKVY)
4. Mission for Integrated Development of Horticulture
5. Farm Machinery Banks

3. Venturing into Post-Harvest and Food Processing

India stands as a global fruit and vegetable hub, ranking second in overall production after China. With abundant natural resources and evolving consumer trends such as urbanization, nuclear families, and increased disposable income, the Indian food supply chains are poised for growth. Factors such as organized retail penetration, demand for functional food, and emphasis on health foods further drive this sector's expansion.

Despite a strong agricultural production base, India grapples with massive wastage of agricultural produce. Food processing rate remain low, with significant room for improvement across various sectors. Value addition in processing stands at a mere 20%, highlighting untapped potential. The food processing sector, contributing approximately 14% to manufacturing GDP, presents opportunities for employment and economic growth. India's low share in world trade for processed foods underscores the potential for market expansion. The major issues of food processing industry are as follows:

- Significant portion of the value added food products come from unregistered small units.

- Approximately 90% of the total value added is attributed to primary processing, overshadowing secondary and tertiary processing.
- By-product processing of major fruits and vegetables holds immense potential for industrial growth, particularly in rural areas.
- Industries reliant on fruits and vegetables face the challenge of seasonality, necessitating procurement of raw materials during peak harvesting times.
- Due to the perishable nature of raw materials, extra care is essentially needed in handling, transportation, storage, and processing.
- Proximity to raw material sources is crucial for these industries to minimize transportation costs and ensure timely processing.
- Unlike other industries, fruit and vegetable-based units encounter fluctuations in the quality and quantity of raw materials.
- Fluctuating raw material prices pose challenges in setting prices for processed products throughout the year.
- The domestic demand for processed foods remains low due to preferences for fresh produce and affordability concerns.
- Challenges in developing the domestic market include inadequate infrastructure such as cold storage, transportation facilities, and food testing laboratories.
- Limited marketing networks and infrastructure hinder the promotion of processed products.
- The government supplements fruit processing by providing facilities at agricultural centers at nominal costs for consumers.
- Strict measures are necessary to ensure accuracy in preservation and safety of raw materials at all stages of movement and custody.
- Limited capital often prevents small-scale units from accessing cold storage facilities, which has insufficient government support.
- Many processing units operate on a small scale, often managed within households.
- Inadequate hygiene standards in food preparation leads to rejection and losses

4. Exploring Business Opportunities in Crop Residue Management

I. Utilizing Crop Residues as Livestock Feed

In India, crop residues have long been utilized as animal feed or supplemented with chemicals. However, their low digestibility and unappealing nature limit their suitability as sole feed for cattle. Rice residues, in particular, contain high silica content, making them poor cattle feed. To enhance their nutritional value, various methods such as physical, chemical, and biological treatments are employed to break down ligno-cellulose connections. Wheat straw, for instance, can be processed into small bits for easier consumption by livestock. Additionally, rice straw stems, which contain less silica, are more digestible and can be enriched with urea and molasses to meet animals' nutritional needs.

II. Crop Residues for Compost Production

Crop wastes can also be utilized for compost production. Used as animal bedding, crop residues absorb urine in animal sheds, enriching them with nitrogen. Composting rice crop wastes can yield nutrient-dense manure comparable to farmyard manure. Mechanized composting processes can further enhance

the efficiency of compost production, resulting in a valuable product rich in nitrogen, phosphorus, and potassium. This compost can serve as a growing medium or soil amendment, enhancing soil fertility and organic matter content.

III. Mushroom Cultivation from Crop Residues

Mushroom cultivation presents a profitable agri-business opportunity utilizing rice and wheat straw as substrates. Paddy straw mushrooms, known for their ease of cultivation, can be grown using rice straw as a primary material. Alternatively, wheat straw is commonly used by farmers. The cost of mushroom cultivation varies depending on the raw material, with rice straw offering a more economical option. Rice straw can yield significant quantities of mushroom products, making it a lucrative venture for farmers.

IV. Bio-char Production and Utilization

Bio-char, produced through the thermal decomposition of organic materials, offers another avenue for utilizing crop residues. Hydrothermal carbonization (HTC) is an innovative method that efficiently converts biomass into hydrochar, a carbon-rich product with higher heating value. Rice straw, with its abundant availability, holds great potential for bio-char production. This sustainable process not only helps manage crop residues but also produces a valuable resource for various industrial and agricultural applications.

5. Exploring Entrepreneurship Opportunities in Cold Storage

Cold Supply Chain management is crucial for preserving perishable and temperature-sensitive goods, including fruits, vegetables, dairy, food items and pharmaceuticals, which require proper storage to maintain quality and extend shelf life. It involves continuous monitoring, automation, and effective deployment of various technologies. The fundamental components of a Cold Supply Chain include cooling systems, transportation, and storage of perishable commodities. Among these, storing perishable goods is particularly vital due to the fluctuating nature of supply and demand. The Cold storage facilities can be categorized as private, semi-private, and public. Private and semi-private facilities are typically owned or operated by the entities that produce or own the stored products. Various construction types cater to different temperature requirements and storage needs, such as bulk storage, production stores, and ports.

The increasing demand for perishable products is expected to drive the growth of the cold storage market. Factors such as rising global milk and meat production contribute to the growing need for cold storage facilities. India's cold storage market is currently fragmented and largely unorganized. The India cold chain market reached a value of nearly INR 1918.86 Billion in 2024. The industry is further expected to grow at a CAGR of 12.70% over the forecast period of 2025-2034 to attain a value of INR 6342.82 Billion by 2034. There is a significant gap in the cold chain infrastructure, particularly for products like fruits, vegetables, dairy, meat, seafood, and pharmaceuticals. Addressing these gaps presents ample entrepreneurial opportunities to enhance the cold storage infrastructure and reduce perishable product spoilage.

6. Exploring Entrepreneurship Opportunities in Solar Energy

India, blessed with abundant sunlight throughout the year, stands as a beacon for solar energy utilization. The government's unwavering commitment to renewable energy adoption has catalyzed remarkable growth within the solar industry. As of March 2024, the total estimated solar potential of the country stood at 748.98 GW with total of 58 solar parks having a sanctioned capacity of 40 GW. Following subsectors have potential job opportunities in solar energy:

1. Solar Power Generation
2. Solar Panel Manufacturing: Nurturing Indigenous Production
3. Solar Water Pumping
4. Solar Street Lighting
5. Solar Home Lighting Systems
6. Solar Water Heating
7. Solar Energy Consulting
8. Engineering, Procurement, and Construction (EPC) Services
9. Solar Energy Monitoring and Analytics
10. Solar Education and Training

The Indian government has launched the ambitious National Solar Mission with the target of generating 500 gigawatts (GW) of solar power by 2030. This mission aims to increase the adoption of solar energy across various sectors to reduce dependence on fossil fuels and mitigate climate change effects. To incentivize investment in solar energy, the government provides subsidies for the installation of solar power systems. Under the net metering policy, consumers who generate surplus solar power from their systems can feed it back into the grid. This allows consumers to offset their electricity bills by earning credits for the excess energy generated, thus promoting the adoption of solar energy and decentralizing power generation. To further encourage the adoption of solar energy, the government offers tax incentives to businesses and individuals investing in solar power projects. These incentives may include tax credits, accelerated depreciation benefits, and exemptions from certain taxes, reducing the overall cost of investment and increasing the attractiveness of solar projects. Through the Direct Benefit Transfer (DBT) Scheme, both the central and state governments provide subsidies to homeowners for installing solar panels. This subsidy scheme aims to make solar power systems more affordable for residential consumers, thereby increasing the penetration of solar energy in the residential sector and reducing the burden on conventional power sources.

The major challenges in the Solar Industry are significant capital investment required in solar energy projects for setting up solar power plants, for equipment, installation, and infrastructure. Shortage of skilled labor, solar energy technology requires trained professionals for tasks such as design, installation, maintenance, and operation of solar power systems. Scarcity of skilled workers in the solar sector, leads to delays, quality issues, and increased costs for solar projects. Uncertainty in government policies and regulations. Changes in policies, subsidy schemes, tariffs, and regulations can impact the economics of solar projects and create uncertainty for businesses and investors.

7. Exploring Startup Opportunities in Protected Cultivation

The global demand for high-quality fresh vegetables has spurred the adoption of protected cultivation methods. These techniques offer a viable solution to enhance productivity and quality while managing various biotic and abiotic stresses encountered in open-field cultivation. Protected cultivation presents lucrative opportunities, particularly in peri-urban areas near major cities where there is a rising demand for premium-quality produce. High-value crops such as tomatoes, cherry tomatoes, colored peppers, parthenocarpic cucumbers and brinjal can be grown profitably in such areas. Additionally, the technology facilitates the production of virus-free seedlings, catering to agro-entrepreneurial ventures. Successful implementation of protected cultivation hinges on meticulous planning. Factors such as market demand, proximity to markets, climatic conditions, soil quality, water quality, economic feasibility, crop selection, and labor requirements must be carefully assessed. Further, aligning

production and harvest timings with market fluctuations is critical for maximizing profitability.

Protected cultivation offers numerous advantages, including reduced reliance on chemical inputs, increased yields (3-5 times higher than open-field cultivation), and improved produce quality. However, it requires significant investment and technological upgrades tailored to specific regions. The future of protected cultivation in India is promising, with the potential to drive sustainable crop diversification, intensification, and vertical productivity growth in vegetable crops. To ensure its sustainability, there is a pressing need to develop skilled manpower, particularly among rural youths, for designing, fabricating, installing, and maintaining protected structures, as well as managing crop production under controlled conditions.

8. Entrepreneurship in Honeybee Production and Small-Scale Honey Processing Plants

Beekeeping, the art of scientifically rearing bees to produce honey and other valuable bee products, presents a lucrative opportunity for entrepreneurship. Beyond honey, beekeepers can harvest beeswax, bee venom, propolis, and royal jelly. This enterprise not only generates income but also aids in crop pollination, making it an attractive venture for rural youth and agricultural graduates. Unlike many businesses, beekeeping doesn't demand sophisticated technology, hefty capital investment, or extensive infrastructure. It seamlessly integrates with existing agricultural practices, bolstering the economic landscape of farming communities. In India, beekeeping has emerged as a leading agribusiness, capitalizing on the diverse climatic conditions and abundant floral resources across the nation.

Despite its potential, beekeeping remains largely a small-scale industry, underserved in terms of scientific support and infrastructure. Recognizing the domestic and international demand for Indian honey, there's a pressing need to enhance productivity to meet escalating market needs. According to the National Agricultural Commission, India requires a staggering 200 million bee colonies to adequately pollinate 12 key crops dependent on insect pollination. Achieving this target not only creates employment opportunities for 21.5 million individuals but also yields an estimated 10 million tons of honey.

9. Exploring Entrepreneurship Opportunities in Horticultural Nursery Raising

Cultivating traditional fruit crops such as mango, banana, pomegranate, pineapple, grape, and citrus can provide sustainable livelihoods for small landholders. However, the availability of quality planting material and the lack of standardization and certification are significant challenges hindering the expansion of these crops. While some state governments have established nursery production facilities, a considerable gap remains between demand and supply. Investing in a commercial nursery unit can be lucrative due to the premium prices good quality planting material commands. Additionally, there is a growing demand for nursery plants for decorative flowers and shrubbery plants. Exclusive production of vegetable seedlings is also emerging as a profitable venture in major vegetable growing areas. Entrepreneurs can choose to specialize in fruits, vegetables, or flowers, or even venture into online marketing of planting material.

Commercial nursery production requires significant capital investment. The project components typically include the establishment of a mother plant garden, irrigation infrastructure, poly house, mist chamber, shade net area, fencing, and other utilities. Since returns typically start accruing from the third year of establishment, entrepreneurs must capitalize operational expenses for the initial three years, covering maintenance of the mother plant garden, rootstock production, labor, etc. The nursery establishment of horticultural crops presents substantial opportunities for entrepreneurship development. While capital-intensive, the potential for sustainable returns makes it an attractive investment option.

10. Entrepreneurship Potential with Vermicomposting

Vermicomposting has emerged as a transformative practice in vegetable farming and kitchen gardening globally. It is indispensable component of organic farming, the vermicompost, enriched with humus, macronutrients (N-P-K), micronutrients, beneficial microbes, antibiotics, enzymes, and growth hormones, offers a plethora of benefits to soil health and plant growth. Its nutrient-rich composition not only enhances soil fertility but also promotes microbial activity and soil structure improvement. Studies consistently affirm its positive impact on soil quality, including increased organic carbon content, enhanced nutrient availability, heightened cation exchange capacity, and improved water retention capabilities.

The entrepreneurial potential of vermicomposting extends far beyond its agronomic benefits. Particularly in rural areas, where unemployment rates often soar, establishing vermicompost units can serve as a catalyst for economic empowerment. Government initiatives, coupled with expert guidance and training programs, empower unemployed youth to embark on entrepreneurial ventures in vermicomposting. Low-cost vermicomposting units, not only create employment opportunities but also contribute to the socio-economic development.

The burgeoning demand for organic produce has fueled a corresponding increase in the demand for vermicomposting. Farmers, driven by a growing awareness of environmental sustainability and consumer preferences for chemical-free products, are increasingly turning to vermicomposting as a natural alternative to conventional fertilizers. This surge in demand presents a lucrative opportunity for aspiring entrepreneurs to capitalize on the market potential of vermicomposting.

11. Exploring Entrepreneurship in Fisheries and Aquaculture

The fisheries and aquaculture sectors stand as pillars in the global food supply chain, crucially providing protein to millions of people worldwide. India's demand for protein sources like fish is substantial, making fisheries and aquaculture integral components of the nation's food security strategy. The country ranks third in the world in terms of fisheries production and second in aquaculture output and providing livelihoods to over 145 million people across the country. This commendable performance is a testament to India's vast coastal areas, inland water bodies, and diverse aquatic ecosystems. Fish and fish products constitute a substantial portion of India's agricultural exports, accounting for 10% of total exports and nearly 20% of agricultural exports. The country's reputation for quality seafood products has helped it carve a niche in international markets. During 2022-23, India had contributed by an all-time high 12,19,237 MT aquaculture production, and has achieved an all-time high export of USD 8.09 billion.

The fisheries and aquaculture sectors encompass a wide range of activities, from traditional capture fisheries to modern aquaculture techniques. Inland and marine capture fisheries, aquaculture farming, gear manufacturing, navigation services, oceanographic research, aquarium trade, fish breeding, processing facilities, and related research and development initiatives collectively form the intricate web of this industry, creating a diverse ecosystem of opportunities for stakeholders. Whether it's cultivating high-value fish species, breeding crustaceans, or cultivating aquatic plants, Entrepreneurs in this field can explore innovative farming techniques, sustainable practices, and value-added products to meet evolving consumer preferences and market demands. Moreover, the multiplier effect of these industries extends beyond direct employment, creating ancillary opportunities in transportation, processing, marketing, and support services, thereby fostering inclusive growth. From traditional pond-based systems to innovative bio-floc-based and recirculating aquaculture systems, entrepreneurs have a range of options to choose from based on factors such as water availability, land suitability, market demand, and sustainability goals. Innovations in seafood processing technologies are revolutionizing the way fish

and fish products are handled, preserved, and marketed. Advanced processing techniques not only extend the shelf life of seafood products but also enhance food safety, nutritional value, and consumer appeal. From value-added products like ready-to-cook meals and seafood snacks to innovative packaging solutions that reduce waste and improve convenience.

12. Startup opportunities in Hydroponics

The practice of growing plants without soil is known as hydroponics, has become popular all over the world because of its effectiveness, sustainability, and promise for increased yields. Hydroponic farming involves growing plants in nutrient-rich water solutions, with their roots suspended in the solution or supported by an inert medium such as perlite or coconut coir. This method eliminates the need for soil, making it suitable for various environments, including urban areas with limited space. Urban agriculture ventures leverage underutilized spaces such as rooftops, vacant lots, and abandoned buildings and to maximize space in densely populated urban areas where land availability is limited, hydroponic farms, provide fresh, nutritious food to local communities. Entrepreneurs can establish scalable operations by stacking layers of growing trays vertically, enabling efficient land utilization and increased crop yields, providing fresh produce closer to consumers while reducing transportation costs and carbon footprint. Entrepreneurs can collaborate with city governments, community organizations, and restaurants to create sustainable food ecosystems.

Establishing large-scale commercial greenhouse operations equipped with hydroponic systems to cultivate a wide range of crops high-value products such as microgreens, edible flowers, and exotic fruits year-round. These greenhouses offer controlled environments optimized for plant growth, independent of external weather conditions. Entrepreneurs can capitalize on the demand for locally grown, pesticide free produce by implementing sustainable farming practices and leveraging technological advancements such as automated climate control and remote monitoring systems. Opportunities also exists to develop specialized nutrient solutions tailored to different crop requirements, as well as manufacture hydroponic equipment and infrastructure optimized for efficiency and productivity. Entrepreneurs can develop advanced sensors, automation systems, and data analytics platforms tailored to the unique requirements of hydroponic growers.

Exploring the synergies between aquaculture and hydroponics to create sustainable farming systems. Aquaponics ventures combine fish production with hydroponic crop cultivation, utilizing fish waste as a nutrient source for plants while purifying the water for the aquatic environment. Entrepreneurs can establish integrated aquaponics farms that produce both seafood and fresh produce, offering diverse revenue streams and environmental benefits such as reduced water consumption and nutrient recycling. Meeting the growing demand for hydroponics education and training by establishing educational ventures focused on teaching sustainable farming practices and business skills. Entrepreneurial initiatives can offer workshops, online courses, and hands-on training programs tailored to individuals, schools, and community organizations.

By streamlining the supply chain, businesses can enhance the quality and consistency of hydroponically grown produce while reducing resource waste and operational costs. Expanding hydroponics farming into new domestic and international markets by leveraging strategic partnerships and distribution channels. Entrepreneurs can collaborate with distributors, retailers, and importers to introduce hydroponically grown produce to overseas markets, capitalizing on the growing demand for fresh, locally sourced food.

AI IN AGRICULTURE - THE FUTURE OF FARMING

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What is the future of AI in agriculture?

AI is sure to play an increasingly large role in agriculture and food sustainability over the coming years. Technology has always been at the forefront of agriculture, from primitive tools to irrigation to tractors to AI. Each development has increased efficiency while reducing the challenges of farming.

Agriculture plays a crucial role in the economic sector for each country. Population around the world is increasing day by day, and so is the demand for food. The traditional methods that are used by the farmers are not sufficient to fulfill the need at the current stage. Hence, some new automation methods are introduced to satisfy these requirements and to provide great job opportunities to many people in this sector. Artificial Intelligence has become one of the most important technologies in every sector, including education, banking, robotics, agriculture, etc. In the agriculture sector, it is playing a very crucial role, and it is transforming the agriculture industry. AI saves the agriculture sector from different factors such as climate change, population growth, employment issues in this field, and food safety. Today's agriculture system has reached at a different level due to AI. Artificial Intelligence has improved crop production and real-time monitoring, harvesting, processing and marketing. Different hi-tech computer-based systems are designed to determine various important parameters such as weed detection, yield detection, crop quality, and many more Challenges in Agriculture using traditional methods

Before understanding AI impact and application in Agriculture, we must understand the challenges in agriculture by using traditional methods, which are as under:

- In farming, different weather factors such as Rainfall, temperature, and humidity play an important role. Due to climatic changes and pollution, weather abruptly changes making it difficult for farmers to take appropriate decisions for harvesting, sowing seeds, and land preparation.
- For a better crop, it is necessary that the soil should be productive and have the required nutrition, such as Nitrogen, Phosphorous, Potassium and other minor elements. If these nutrients are not present in sufficiently available in the soil, then it may lead to poor quality crops. But it is difficult to identify the presence of soil-nutrients traditionally.
- In the agriculture lifecycle, it is required that we protect our crops from weeds. Else it may increase the production cost, as they compete for soil nutrients. Traditionally, identification and prevention of crop from weeds is difficult.

Applications of Artificial Intelligence in Agriculture

Artificial Intelligence in Agriculture

As with the traditional methods of Agriculture, there are so many challenges that farmers would face. To solve these challenges, AI is being widely used in this sector. Artificial Intelligence has the capacity to revolutionize the agriculture sector. It could help the farmers by yielding healthier crops, control pests, soil monitoring, and in many more ways. Below are some key applications of Artificial Intelligence in the Agriculture sector

1. **Weather & price Forecasting: -**
   With the help of AI weather forecasting, farmers can have information on weather analysis, and accordingly, they can plan for the type of crop to grow, seeds to sow, and harvesting the crop. With price forecasting, farmers can get a better idea about the price of crops for the next few weeks, which can help them to earn maximum profit.
2. **Health Monitoring of Crops: -**
   The quality of crop widely depends on the type of soil and nutrients present in the soil. As the soil quality is degrading day by day, and it is hard to determine, AI has come up with a new application called Plantix. It was developed by PEAT to identify the deficiencies in soil, including plant pests and diseases. With the

help of this application, farmers can get an idea to use better fertilizer which can improve the harvest quality. In this app, AI's image recognition technology is used by which farmers can capture the images of plants and get information about the presence of soil nutrients.

3. **Agriculture Robotics: -**

Robotics is being widely used in different sectors, mainly in manufacturing, to perform complex tasks. Nowadays, different AI companies are developing robots to be employed in the Agriculture sector. These AI robots are developed in such a way that they can perform multiple tasks in farming. AI robots are also trained in checking the quality of crops, detect and controlling weeds, and harvesting the crop much faster than humans.

4. **Intelligent Spraying:-**

With AI sensors, weed can be detected easily, and it also detects weed infested areas. On finding such areas, herbicides can be precisely sprayed to reduce the use of herbicides and also saves time and crop. There are different AI companies that are building robots with AI and computer vision, which can precisely spray on weeds. The use of AI sprayers can widely reduce the number of chemicals used on fields, and hence improves the quality of crops while saving money.

5. **Disease Diagnosis: -**

With AI predictions, farmers can get knowledge of diseases easily. With this, they can timely diagnose diseases and prepare strategy to deal with it. It can save the crops, expenses and farmer's time. To do this, firstly, images of plants are pre-processed using computer vision technology. This ensures that plant images are properly divided into the diseased and non-diseased parts. After detection, the cropped up image of diseased part is sent to the labs for further diagnosis. This technique also helps in the detection of pests, deficiency of nutrients, diseases and any other diagnosis.

AI start-ups in Agriculture

Below is the list of popular start-ups in Agriculture:

1. **Prospera: -**

It is an Israeli start-up founded in the year 2014. This company creates intelligent solutions for efficient farming. It develops cloud-based solutions that collect all the data from the fields such as soil/water, aerial images, etc. and combine this data with an in-field device. This device is known as the “Prospera”, it makes insights from the data. The device is powered by various sensors and technologies such as computer vision.

2. **Blue River technology:-**

Blue-River technology is a California-based start-up that was started in the year 2011. It develops next-generation agriculture equipment using AI, computer vision, and robotics technology. This equipment identifies individual plants using computer vision, ML decides action, and with robotics, the action is performed. This helps the farmers to save costs and chemicals in farming.

3. **Farm Bot:-**

Farmbot is an open-source CNC precision farming machine and software package, which is developed to grow crops by anyone at their own place. The complete product “Farmbot" is available at a price of $4000, and it enables anyone to do complete farming ranging from seed plantation to weed detection on their own with the help of a physical bot and open-source software system. It also provides a webapp that can be downloaded on any smartphone or computer system and allows us to manage farming from any place at any time.

4. **Fasal:-**

The use of AI in the agriculture industry is increasing day by day in various places across the world. However, agriculture holdings per farmer in the poorer region is less compared to the rich region, which is advantageous for automated monitoring as it requires a lesser number of devices with low bandwidth and size to capture the complete agriculture data. In this field, the Indian start-up Fasal is working. It uses affordable sensors and AI to provide real-time data and insights to farmers. With this, farmers can be benefitted from real-time, actionable information relevant to day-to-day operations at the farm. The company's devices are easy to implement for small places. They are developing AI-enabled machines to make precision farming that can be accessible by every farmer.

5. One Soil: -

It is an application that is designed to help farmers to take a better decision. This app uses a machine-learning algorithm and computer vision for precision farming. It monitors the crops remotely, identifies problems in the fields, check the weather forecast, and calculate nitrogen, phosphorus, and potassium fertilizer rate, etc.

BENEFITS AND CHALLENGES OF AI IN AGRICULTURE-

Advantages

AI enables better decision-making

Predictive analytics is really a boon for the agriculture industry. It helps the farmers solving the key challenges of farming, such as analyzing the market demands, price forecasting, and finding optimal times for sowing and harvesting the crop. Moreover, AI-powered machines can also determine soil and crop health, provides fertilizer recommendations, monitor the weather, and can also determine the quality of crop. All such benefits of AI in agriculture enable the farmers to make better decisions and do efficient farming.

AI brings cost savings.

Precision farming using AI-enabled equipment helps the farmers to grow more crops with lesser resources and cost. AI provides the real-time insights to farmers that enables them to take proper decision at each stage of farming. With this correct decision, there is less loss of products and chemicals and efficient use of time and money. Moreover, it also allows the farmers to identify the particular areas that need irrigation, fertilization, and pesticide treatment, which saves excessive use of chemicals on the crop. All these things sum up and result in reduced use of herbicides, better crop quality and high profit with fewer input resources.

AI reduces labour shortage.

There has always been an issue of labour shortage in the agriculture industry. AI can solve this issue with automation in farming. With AI and automation, farmers can get work done without having more people, and some examples are Driverless tractors, smart irrigation and fertilizing systems, smart spraying, vertical farming software, and AI-based robots for harvesting. AI-driven machines and equipment are much faster and accurate compared to human farmhands.

Challenges of AI adoption in Agriculture

By looking at the advantages of AI for sustainable farming, implementing this technology may seem like a logical step for every farmer. However, there are still some serious challenges that everyone knows, which are as follows:

Lack of familiarity with AI machines

Although there are lots of benefits of using AI in agriculture, but people are not familiar with the use of AI-enabled solutions and equipment across most of the world. To solve the issues, AI companies should provide the basic equipment to farmers, and once they get familiar with them, then provide them with advanced machines.

Lack of experience with emerging technologies

The adoption of AI and emerging technologies in agriculture for developing countries can be a challenging task. It will be very difficult to sell such technologies in the areas where there is no such agricultural technology exists on ground, in such areas, to use these technologies, farmers need assistance in use and maintenance.

Privacy and security issues

As there are still no clear regulations and policies for using AI, it may raise various legal issues. Further, due to the use of software and the internet, there may also be some privacy and security issues such as cyberattacks and data leaks. All these issues can create a big problem for farm owners or farmers.

CONCLUSION:

The future of AI in farming largely depends on the adoption of AI solutions. Although some large-scale researches are in progress and some applications are already in the market, yet industry in agriculture is underserved. Moreover, creating predictive solutions to solve a real challenge faced by farmers in farming is still in progress at an early stage.

Student start-up and Innovation Policy, Gujarat

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Student Start-up and Innovation Policy (SSIP) is trying to develop a grassroots level culture to harness creative potential of students of Polytechnic in Agricultural Engineering (PAE) and College of Agricultural Engineering and Technology (CAET). The Student Start-up and Innovation Policy (SSIP) 1.0 launched by the Government of Gujarat has been successful in promoting entrepreneurship and innovation among students. Overall, the SSIP 1.0 policy has been a significant success in Gujarat, and it has helped create a culture of innovation and entrepreneurship among students.

The Student Start-up and Innovation Policy (SSIP) 2.0 is the updated version of the SSIP 1.0 policy launched by the Government of Gujarat in January 2022. The policy provides funding assistance, mentorship, incubation, and accelerator support to the student start-ups, along with access to industry networks and global markets.

The SSIP 2.0 policy has also introduced a new concept of Innovation and Entrepreneurship (iHub), which is acting as a one-stop-solution for sector-wise start-ups and entrepreneurs. The policy aims to create an innovation-driven ecosystem in the state and develop a culture of entrepreneurship among students. It seeks to foster innovation, creativity, and collaboration among start-ups, industry, academia, and government.

Overall, the SSIP 2.0 policy is a step towards creating a robust start-up ecosystem in Gujarat and providing a platform for young entrepreneurs to realize their dreams.

Support to Individual Students/Beneficiaries

- Maximum INR 2.50 Lakh per PoC/Prototype /Innovation
- Intellectual Property Support up to 100% of expenses
- Exposure to Tinkering Lab, Innovation Lab, Incubation Centers
- Large scale sensitization, events, and programs for developing Scientific Mindset
- Collective/Community level support system and activities
- Capacity Building

System of start-up

Exposure/ culture

Universities/ schools and Innovation ecosystem

↓

Ideas/ Innovations

Pre incubation, building up of ecosystem and start-up culture among students

↓

Start-up

Decentralize start-up, acceleration through industry linkages, policy support and funding

↓

Scale up

Regulatory, finance, public policy support

At present there are 187 grantee institutes/ universities present in Gujarat to whom support available by the SSIP 2.0 Gujarat.

During year 2024-25, total 14 students from various colleges under NAU were felicitated with funds and mentor supports from university start-up cell

For more details, contact;

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Also visit; www.nau.in, www.ssipgujarat.in

Source: Student start-up cell, PAE- CAET, NAU, Dediapada

News Digest 2024

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Climate Challenges and Progress Highlighted at COP29

The COP29 climate summit revealed alarming statistics on global warming and its effects, including rising sea levels and extreme weather events. However, progress was also noted, such as a 13.59% increase in India's renewable energy capacity in 2024. Global efforts aim to reduce emissions by 42% by 2030, with renewable energy usage expected to rise to 20% by the same year.

India's Economic Performance Praised by IMF

IMF praised India as a global "bright spot," projecting 6.8% growth for 2024-25, driven by private consumption and public investment. Despite the election year, the government maintained fiscal discipline. Inflation is below 5%, and forex reserves hit $648.6 billion. Key growth drivers included Digital Public Infrastructure and a young, expanding workforce. India is expected to contribute 17% to global economic growth.

India's Strong Ties with Brunei

Prime Minister Narendra Modi visited visited Bandar Seri Begawan, Capital of Brunei Darussalam trip, first-ever bilateral visit by an Indian Prime Minister to Brunei, on Sept 3 & 4, 2024. Brunei located in South China Sea is of strategic importance for India as almost 55 per cent of its trade passes through the disputed waters The visit is a part of 'Act East' Policy and Indo-Pacific Vision. The visit aimed at strengthening ties in defense, trade, energy, and cultural exchange. He was welcomed by Crown Prince Muhtadee Billah, during his visit, PM Modi inaugurated the new chancery premises of the High Commission of India and emphasized the significance of historical ties. He also visited the iconic Omar Ali Saifuddien Mosque.

PM Modi Receives Russia's Highest Civilian Honor

Prime Minister Narendra Modi was conferred with the 'Order of St. Andrew the Apostle' by Russian President Vladimir Putin. This prestigious award, established in 1698 by Tsar Peter the Great, honors Modi's contribution to strengthening India-Russia Relations. Modi dedicated the award to the people of India and emphasized the deep friendship between the two nations.

Prime Minister's visit to Nigeria, Brazil and Guyana from 16-21 November, 2024.

At the invitation of the President of the Federal Republic of Nigeria H.E. Mr. Bola Ahmed Tinubu PM Modi's visited Nigeria. India's focus on strengthening ties with African nations. Nigeria's membership in the G20, the visit aims to enhance cooperation in areas such as defense, trade, and cultural exchange. India and Nigeria have been strategic partners since 2007 with growing economic, energy and defence collaboration. More than 200 Indian companies have invested over USD 27 billion in important sectors in Nigeria. India and Nigeria also share a strong development cooperation partnership.

- Prime Minister attended the G20 Summit at Rio De Janeiro during 18-19 November, 2024 hosted by the President of the Federative Republic of Brazil, H.E. Mr. Luis Inacio Lula Da Silva. India is part of the G20 Troika along with Brazil and South Africa and has been actively contributing to the ongoing G20 Summit discussions.
- Prime Minister Narendra Modi visited Guyana, marking the first visit by an Indian PM in 56 years. He was warmly welcomed by President Mohamed Irfaan Ali and cabinet ministers. During his visit, PM Modi

addressed Guyana's parliament, participated in the India-CARICOM Summit, and explored opportunities for bilateral cooperation in sectors like hydrocarbons and defense. Both Guyana and Barbados, another small Caribbean country, conferred their highest national awards on Modi. People of Indian origin, the biggest ethnic group in Guyana, make up 43.5% of the population.

Modi's Visit to Kuwait

Prime Minister Narendra Modi's visited to Kuwait marks the first visit by an Indian PM to the Gulf nation in 43 years. The visit, at the invitation of Kuwaiti Emir Sheikh Meshal Al Ahmad Al Jaber Al Sabah, to attend the opening ceremony of the 26th Arabian Gulf Cup in Kuwait on 21 December 2024 as the 'Guest of Honour'. Shri Narendra Modi was conferred the highest award of the State of Kuwait 'The Order of Mubarak Al Kabeer'. The visit aimed to strengthen multifaceted ties. India and Kuwait have close historical relations, with bilateral trade valued at USD 10.47 billion in 2023-24. The leaders exchanged views on bilateral, global, regional and multilateral issues of mutual interest.

India-Singapore Bilateral Ties and Cooperation

The year 2025 marks the celebrations of the 60th anniversary of establishment of diplomatic relations between India and Singapore. To commemorate this special occasion, Hon'ble President Smt. Droupadi Murmu and President of the Republic of Singapore, H.E. Mr. Tharman Shanmugaratnam unveiled a joint logo in New Delhi on 16 January 2025. Overall, the logo reads "India Singapore 60 years of diplomatic relations". Our bilateral ties are characterized by strengthening political, defence, economic, cultural, educational and people-to-people contacts. Singapore is a key pillar of India's Act East Policy and our vision of the Indo-Pacific. For the 60th anniversary of our diplomatic relations, several commemorative events are being planned that reflect the significance India and Singapore attach to the bilateral partnership.

India-UAE Nuclear Energy Cooperation

India and the UAE signed a pact to enhance peaceful uses of nuclear energy. The agreement involves collaboration between India's NPCIL and UAE's ENEC, which manages nuclear power plants in the Emirates. This partnership reflects deepening ties in energy and technology sectors.

India's Role in Ukraine Conflict Resolution

Russian President Vladimir Putin acknowledged India's efforts to mediate the Ukraine conflict. Prime Minister Modi's active role in fostering dialogue between conflicting parties underscores India's growing influence in global affairs

National Security Advisor Ajit Doval visited Russia to attend a BRICS meeting and explore India's potential role in resolving the Ukraine conflict. The visit follows PM Modi's recent trips to Moscow and Kyiv, highlighting India's diplomatic engagements.

India-Africa Trade Collaboration

Commerce and Industry Minister Piyush Goyal highlighted the potential to double India-Africa trade to $200 billion within seven years. Areas of collaboration include agriculture, pharmaceuticals, mining, tourism, critical minerals, and renewable energy. The Duty Free Tariff Preference (DFTP) scheme participation by African nations was emphasized, alongside opportunities in IT, health, financial inclusion, entertainment, and sports. The DFTP is a unilateral non-reciprocal preferential tariff scheme provided by the Government of India for the least developed countries (LDCs). India was the first developing country to introduce a preferential tariff program for the LDCs. The objective of this Scheme is to grant tariff preferences on the exports of products originating in the LDCs on imports to India to improve their trading opportunities and use it as a tool for their development

India-Vietnam Defence Cooperation

India and Vietnam aim to strengthen defence-industrial ties, focusing on military education, training, and service-to-service cooperation. India has extended a $300 million Line of Credit to Vietnam for defence procurement and plans to export BrahMos supersonic cruise missiles. The collaboration aligns with countering aggressive behavior in the Indo-Pacific region.

China's Brahmaputra Dam Plan

China plans to build the world's largest dam on the Brahmaputra River in Tibet close to Indian border raising concerns in India and Bangladesh. It could negatively affect lower riparian states on safety and ecology. The project, estimated to cost $137 billion, raises apprehensions as it is located in a seismically active Himalayan region. The dam empowers China to control water flow enabling Beijing to release large amounts of water flooding border areas in times of hostilities. India too is building a dam over Brahmaputra in Arunachal Pradesh.

Kash Patel Appointed FBI Director

President-elect Donald Trump nominated Kash Patel as the next director of the Federal Bureau of Investigation (FBI). Patel, who has extensive experience in national security and law enforcement, is set to become the highest-ranking Indian-American in the administration. Trump highlighted Patel's commitment to justice and his plans to address major security challenges.

PM's Water Conservation Campaign

Prime Minister Narendra Modi launched the Jal Sanchay Jan Bhagidari initiative to promote community participation in water conservation. Key achievements include the Jal Jeevan Mission providing tap water to rural households, saving lives, and improving water sustainability through CSR funds and innovative projects.

Green Energy Strategy and Biofuels

India is advancing its green energy goals through biofuels and green hydrogen. Efforts like the ethanol blending program aim to reduce fossil fuel dependence. The goal is to produce 5 million metric tons of green hydrogen annually by 2030, potentially doubling this capacity while addressing challenges like the water-energy nexus.

Changes in Gubernatorial Appointments

President Droupadi Murmu appointments Ajay Kumar Bhalla as Manipur's governor, while Arif Mohammed Khan was shifted to Bihar. These appointments aim to address regional governance needs.

New Navy Chief: Vice Admiral Dinesh Kumar Tripathi

Admiral Dinesh Kumar Tripathi, PVSM, AVSM, NM (born 15 May 1964) is a serving four star flag officer of the Indian Navy. He is the current and the 26th Chief of the Naval Staff, an alumnus of the Indian Naval Academy specialist in communication and electronic warfare who took over Admiral R. Hari Kumar.

Tri-Service Command Reforms: Integration of Forces

The Inter-Services Organisations (Command, Control, and Discipline) Act has been enforced to enhance coordination among the Army, Navy, and Air Force. This step is part of the theaterisation plan to optimize resources and improve operational efficiency. Commanders-in-Chief of Inter-Services Organizations now have expanded authority to ensure discipline across services.

New Chief of National Human Rights Commission,

Ex Supreme Court Judge V Ramasubramanian appointed as Chair Person of National Human Rights Commission (NHRC). A former chief justice of India or a retired judge of the top court are appointed as NHRC chairperson by the president on the recommendation of the selection committee

Tejas Demonstration by Defence Chiefs

In a rare event, the Vice Chiefs of the Indian Air Force, Army, and Navy flew in Tejas fighter jets during the ongoing Tarang Shakti exercise in Jodhpur. This event highlighted India's focus on cross-domain cooperation and showcased the capabilities of the indigenous Tejas aircraft.

Chandrayaan-4 Mission Details

ISRO announced plans for the Chandrayaan-4 mission, which will bring back 2-3 kg of lunar samples to Earth. The mission includes five modules and will feature multiple launches. This mission aims to further India's advancements in space exploration following the success of Chandrayaan-3.

Icarus 2.0

On the eve 2024, Nasa's Parker Solar Probe clocked 700,000 kmph speed, as it plunged into the sun's outer atmosphere, that's around six times faster than earth's speed around the sun. Parkers mission from its launch in August 2018 has been to study the sun, its corona and sloar wind that causes havoc with our power and telecom systems. It darts in and out at astronomical speeds to survive the corona's million-degree temperature and devastating radiation. Its 4.5-inch heat shield can withstand temperature of 1400^{o}C

First Indian Space Tourist: Gopi Thotakura

Gopi Thotakura, a 30-year-old entrepreneur and pilot from Andhra Pradesh, became the first Indian space tourist on Blue Origin's NS-2 mission. He joined five others on a sub-orbital flight aboard Blue Origin's reusable New Shepard vehicle. Thotakura is a cofounder of Preserve Life Corp and an eco-warrior advocating for sustainability. He is a skilled pilot with experience in commercial, aerobatic, and glider planes. His achievement marks a significant milestone for India in space tourism.

New Criminal Laws: A Watershed Moment

India's new criminal laws, including the Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS), and Bharatiya Sakshya Adhiniyam (BSB) replaced the colonial-era IPC, CrPC, and Evidence Act. These reforms emphasize victim protection, proportional penalties, and efficient investigation methods. These changes are transformative for society, aiming to uphold civil liberties and modernize the criminal justice system.

2025 Likely to Be Among Warmest Years

The World Meteorological Organization (WMO) predicts 2025 will likely be one of the three warmest years on record. This follows a decade of rising global temperatures, with 2024 already expected to be the warmest year to date.

India Calls for Global Shift to Sustainable Living

At the United Nations' Summit of the Future, India emphasized the need for adopting sustainable lifestyles to address climate change. The Union Environment Ministry highlighted actionable steps such as saving energy, reducing waste, and promoting sustainable food systems. These measures could potentially reduce annual global emissions by 2 billion tons by 2030.

Supreme Court Advocates Sacred Groves Protection

The SC recommended a comprehensive policy for protecting sacred groves with Cultural and spiritual significance. Sacred groves, often clusters of ancient trees, hold ecological, cultural, and religious Importance. The court suggested their protection under the Wildlife Protection Act, 1972, especially Section 3-C, which allows for conservation declarations.

Kakrapar Nuclear Power Plant

India's indigenous 700 MW nuclear reactor at Kakrapar Atomic Power Station has begun operating at full capacity. The Nuclear Power Corporation of India (NPCIL) announced plans to increase nuclear power capacity to 22,480 MW by 2031-32, with ongoing construction and future projects contributing significantly.

Rural Roads Built Using Plastic Waste

India has constructed nearly 40,000 km of rural roads using plastic waste under the Pradhan Mantri Gram Sadak Yojana. This includes 13,000 km built in the last two years, showcasing progress in sustainable infrastructure development.

New Crop Varieties Released

Prime Minister Narendra Modi released 109 new crop varieties to improve agricultural productivity and increase farmers' income. These varieties focus on reducing input costs and enhancing yield. During an event at the Indian Agricultural Research Institute in New Delhi, the PM interacted with farmers and emphasized value addition in agriculture.

Forest Area Loss Over a Decade

According to data shared by the environment minister Bhupender Yadav, India lost 1,734 sq km of forest area in the last ten years. The highest diversion of forest land for non-forestry purposes occurred between 2014-2024, with Madhya Pradesh and Odisha being the most affected states. Compensatory afforestation, soil and moisture conservation, and wildlife management plans have been implemented to mitigate these losses.

Supreme Court Verdict on Coconut Oil

The Supreme Court resolved a 20-year-old query regarding the classification of coconut oil in small sachets. It ruled that such oil should be classified as edible, not solely for cosmetic use, if its packaging or labeling indicates food usage.

Vulture Conservation Efforts in India

Union Environment Minister highlighted India's efforts to conserve critically endangered vultures on International Vulture Awareness Day. The initiative includes breeding programs in Haryana, Gujarat, Bengal, and Tamil Nadu. These efforts are vital as vultures play a critical role in the ecosystem by preventing the spread of diseases caused by livestock carcasses.

India Wins Maiden Chess Olympiad Title

India clinched its first Chess Olympiad title in Budapest. The men's and women's teams both secured gold medals, with individual golds won by players like D Gukesh and Divya Deshmukh. The 18-year-old Gukesh also became the youngest ever World Champion.

India's Shooting Achievements

India's shooting team won three bronze medals in the Paris Olympics, showcasing significant improvement in the sport. The National Rifle Association of India (NRAI) involved personal coaches in training and ensured form-based selection. However, there is a need for mental fitness improvements and better preparation in shotgun events to enhance future performances.

Bahadur Singh Sagoo elected as President of Athletic Federation of India

Asian Games gold winning former shot putter Bahadur Singh Sagoo was elected unopposed as the Athletic

Federation of India president for four years, succeeding the long serving Adille Sumariwalla. The 51-year-old Sagoo won a shot put gold in 2002., represented India in 2002 and 2004 Olympics and is a member of AFI Commission. He is also a Padm Shri recipient.

World-Class Badminton Academy Opens in Bhubaneswar

A new state-of-the-art badminton academy, shaped like a shuttlecock, was inaugurated in Bhubaneswar. The Rs 75-crore High Performance Centre is a collaborative project involving the Odisha government and Pullela Gopichand Badminton Foundation. It features modern amenities, residential facilities, and eight courts, aiming to nurture Indian badminton talent.

Free Internet Access Bill

The government has approved the consideration of a private member's bill introduced in the Rajya Sabha by CPM member V. Sivadasan. This bill proposes granting all citizens the right to free internet access while ensuring equal access to people in remote and backward regions. It emphasizes that no citizen should be liable to pay fees that may prevent access to internet facilities. The bill also ensures special measures for equitable internet access to marginalized communities.

Enhanced Health Coverage for Senior Citizens

The Union Cabinet announced an additional health coverage of up to ₹5 lakh per year for senior citizens aged 70 and above under the Ayushman Bharat PM-JAY scheme. This coverage is family-based but provides individual top-ups for those already covered.

Gujarat's Green University Certification

Shri Govind Guru University (SGGU) in Gujarat became the first state university to receive a green building certification. The campus includes a Miyawaki forest, an artificial lake, and energy-efficient systems, demonstrating a commitment to sustainability.

Increasing Women in Civil Services

Recent data shows a significant rise in female candidates clearing the UPSC Civil Services Examination. Women are proving equally competent in areas such as analytical ability, general awareness, and decision-making. Efforts to spread awareness about civil services as a viable career for women have contributed to this trend.

Palanpur Tea Seller's Son Gets into IIM Ranchi

Ronak Rathi, a 22-year-old from Palanpur, Gujarat, has been admitted to IIM Ranchi. Coming from a humble background where his father runs a tea stall, Ronak aims to use his MBA to uplift his family and improve their living conditions. He scored 97.68 percentile in CAT.

India's stance on COP 29 held in Baku

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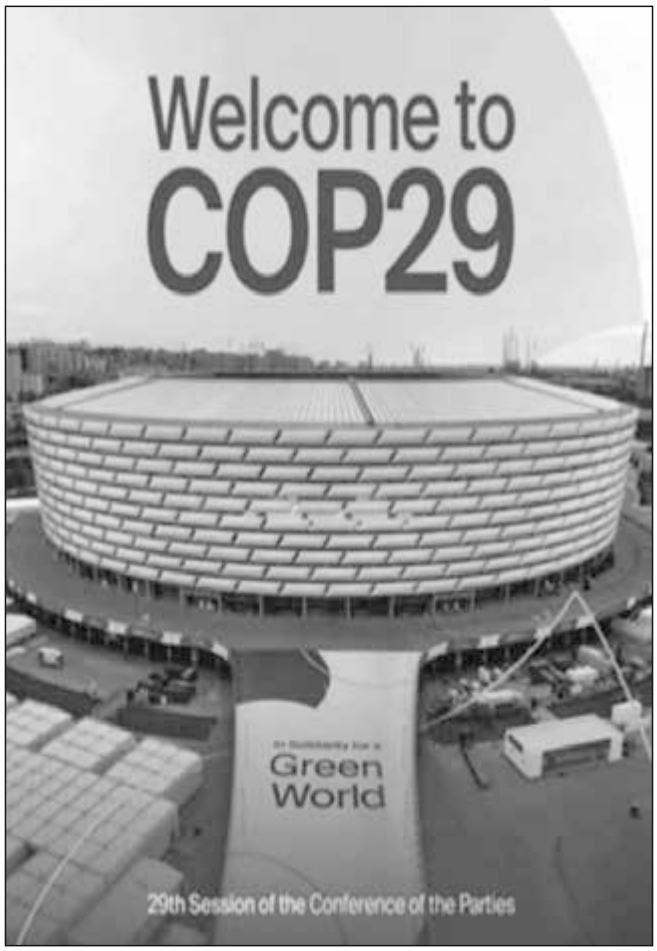
India Rejects Climate Finance Outcome at COP29

As a key voice of the Global South, India rejected the proposed climate finance framework in the COP29 climate conference held in Baku, a move that resonated with several nations sharing similar concerns. In the plenary session, India's negotiator, Chandni Raina, led the charge against the "Baku to Belém Roadmap to 1.5°C," criticizing its insufficient provisions for developing countries. Raina highlighted the disproportionate burden placed on these nations, particularly in mobilizing funds independently, while the developed world lagged in fulfilling its financial commitments. The roadmap proposed a $300 billion global mobilization goal by 2035. However, this figure was criticized for being inadequate, especially since developed countries have historically been the largest contributors to climate change. India pointed out that achieving such targets without clear financing mechanisms undermines the climate justice narrative. Raina firmly stated, "Developed countries are leading the push for a mere $300 billion mobilization goal, which is to be achieved only by 2035. That's nearly 11 years later, relying on diverse sources, including private and multilateral channels." She emphasized that this approach shifts responsibility to developing nations, neglecting the urgent need for equitable contributions from the developed world. She further added, "We are disappointed with the outcome, which clearly reveals the unwillingness of developed countries to fulfill their responsibilities." This failure, she noted, jeopardizes the ability of developing countries to meet their Nationally Determined Contributions (NDCs) and adapt to climate change effectively.



Voices from the Global South

India's rejection found support from other developing nations, including Bolivia and Nigeria, which echoed similar concerns. They criticized the roadmap for undermining equity and failing to account for the historical responsibilities of industrialized nations. Arunabha Ghosh, CEO of the Council on Energy, Environment and Water (CEEW), strongly criticized the COP29 agreement for its lack of ambition. "COP29 has failed to deliver on its core mandates-binding commitments, real finance, and meaningful action to address the climate crisis,". Ghosh pointed out that while the world needs $1.3 trillion for climate finance by 2030, the proposed $300 billion target by 2035 is a hollow gesture. He further argued that the agreement introduces an inequitable principle: "I pollute, you pay." Such an approach, Ghosh warned, risks deepening divides between developed and developing nations. Ghosh, along with former UN Secretary-General Ban Ki-Moon, called for an urgent overhaul of the UN climate negotiation process. They criticized COP29 for encouraging South-South cooperation in climate financing, arguing that it unfairly shifts the financial burden to developing countries.

Looking Ahead

With Brazil's city of Belém set to host COP30 next year, the spotlight is now on ensuring a fairer and more effective climate finance framework. India's firm stance at COP29 underscores the urgent need for developed nations to honor their commitments and provide meaningful support to the developing world in addressing the global climate crisis. India's message is clear: climate justice requires equity, and any agreement falling short of this principle will face strong opposition. The road to COP30 is crucial for redefining global climate policies and ensuring a sustainable future for all.

Conclusion

The COP29 outcome reflects the growing divide in climate negotiations between developed and developing nations. India's rejection has strengthened its position as a voice for the Global South, bringing attention to the urgent need for fair and meaningful climate finance mechanisms. As the world looks to COP30 in Belém, Brazil, the focus will remain on developed countries to meet their financial commitments and address the inequities in global climate action.

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તિલ્કા માંઝી ૧૮મી સદીમાં ઈસ્ટ ઈન્ડિયા કંપની સામેના સશસ્ત્ર સંઘર્ષના એક અગમ્ય નાયક છે. પૂર્વી ભારતના આદિવાસી સંથાલ સમુદાયના તિલ્કા માંઝી ભારતને વિદેશી ચુંગાલમાંથી મુક્ત કરાવવા માટે સામાન્ય લોકોની મજબૂત લાગણીઓનું પ્રતિનિધિત્વ કરે છે. જોકે, તિલ્કા માંઝીના બલિદાન વિશે બહુ ઓછા લોકો જાણે છે.

તિલ્કા માંઝી પક્ષપાતી ઈતિહાસનું ઉત્તમ ઉદાહરણ છે, જે સ્વતંત્રતા પછી લોકોને શીખવવામાં આવ્યું હતું. તિલ્કા માંઝીનું બલિદાન પ્રેરણાદાયક છે. તેમણે અઢારમી સદીમાં, ભારતીય રાષ્ટ્રીય કોંગ્રેસની સ્થાપનાના લગભગ ૧૦૦ વર્ષ પહેલાં, ઈસ્ટ ઈન્ડિયા કંપની સામે લડ્યા હતા. તિલ્કા માંઝી એ સામાન્ય માણસનું પ્રતિનિધિત્વ કરે છે, જે કોઈપણ વિદેશી આક્રમણ સામે જોરશોરથી લડવા તૈયાર હતો. ઘણા ઈતિહાસકારોનો મત છે કે તિલ્ક માંઝીના નેતૃત્વમાં થયેલો બળવો વિદેશી શાસન સામેનો પ્રથમ સ્વતંત્રતા સંગ્રામ હતો.

તિલ્કા માંઝીનું સૌથી મહત્વપૂર્ણ સામાજિક પાસું એ છે કે તેઓ સંથાલ સમુદાયના છે, જે એક આદિવાસી (વનવાસી) સમુદાય છે. સંથાલ સમુદાય હજુ પણ પશ્ચિમ બંગાળ, બિહાર, ઝારખંડ, ઓડિશા અને છત્તીસગઢના કેટલાક ભાગોમાં ફેલાયેલો છે. તિલ્કા માંઝીનો સંઘર્ષ એટલો પ્રેરણાદાયક છે કે પ્રખ્યાત લેખિકા મહાશ્વેતા દેવીએ તેમના જીવન પર એક નવલકથા લખી હતી.

તિલ્કા માંઝીનો જન્મ ૧૧ ફેબ્રુઆરી, ૧૭૫૦ના રોજ સુલતાનગંજના તિલકપુર નામના ગામમાં એક સંથાલ પરિવારમાં થયો હતો, જે હાલમાં બિહારમાં છે. તેમના પિતાનું નામ સુંદર મુર્મુ હતું. સુંદરાએ પોતાના પુત્રનું નામ જબરા રાખ્યું, જે પાછળથી ગામના વડા બન્યા. પહાડિયા ભાષામાં ગામના વડાને માંઝી કહેવામાં આવે છે જ્યારે "તિલકા" નો અર્થ ગુસ્સાવાળી લાલ આંખોવાળી વ્યક્તિ થાય છે. જબરા ગામના વડા બન્યા અને પહાડિયા સમુદાયમાં, ગામના વડાને "માંઝી" તરીકે સંબોધવાનો રિવાજ છે. આ કારણે જબરાને તિલ્કા માંઝી તરીકે ઓળખવામાં આવ્યા. બ્રિટિશ રેકોર્ડ તેમને જબરા પહાડિયા તરીકે વર્ણવે છે.

તિલ્કા માંઝીનું બાળપણ ગાઢ જંગલોમાં વિતાવ્યું. તેમને શારીરિક કસરતનો શોખ હતો અને તેઓ કુસ્તીનો શોખીન હતા. ઝાડ પર ચડવું અને ટેકરીઓ પર ચાલવું એ તેમના જીવનનો એક ભાગ હતો. તેમની જીવનશૈલીએ તેમને નિર્ભય બનાવ્યા. તિલ્કા માંઝી જન્મજાત લડવૈયા હતા અને જુલમી ઈસ્ટ ઈન્ડિયા કંપની વિરુદ્ધ ભાગલપુરની આસપાસ નાની સભાઓનું આયોજન કરતા હતા. ઈસ્ટ ઈન્ડિયા કંપની દ્વારા કુદરતી સંસાધનોના શોષણ અંગે તેઓ ખૂબ ગુસ્સે હતા. તેઓ આદિવાસીઓમાં દેશભક્તિની ભાવના જગાડતા હતા અને

તેમને ઈસ્ટ ઈન્ડિયા કંપની સામેના સંઘર્ષમાં ભાગ લેવા અપીલ કરતા હતા. આ પ્રક્રિયામાં, તિલ્કા માંઝીએ આદિવાસીઓને સંગઠિત કર્યા અને તેમને વિદેશી વર્ચસ્વ સામે તીર અને ધનુષ્યનો ઉપયોગ કરવાની તાલીમ આપી.

૧૭૭૦નું વર્ષ નિર્ણાયક હતું જ્યારે સમગ્ર સંથાલ પ્રદેશમાં ભયંકર દુષ્કાળ પડ્યો હતો. લોકો ભૂખથી મરી રહ્યા હતા. તિલ્કા માંઝીએ ઈસ્ટ ઈન્ડિયા કંપનીનો ખજાનો લૂંટી લીધો અને તેને સ્થાનિક રહેવાસીઓમાં વહેંચી દીધો. તેમના કાર્યથી ઘણા આદિવાસીઓ પ્રેરિત થયા અને તિલ્કા માંઝીની સેનામાં જોડાયા. તિલ્કા માંઝીએ અધિકારીઓ અને લોકોને લૂંટવાનું ચાલુ રાખ્યું, જેઓ વિદેશી શક્તિઓને મદદ કરતા હતા. દમનકારી ઈસ્ટ ઈન્ડિયા કંપની સામે તેમનો સંઘર્ષ ૧૭૭૧ માં શરૂ થયો હતો અને ૧૭૮૪ સુધી ચાલુ રહ્યો. તિલ્કા માંઝી લોકોમાં લોકપ્રિય અશાંતિનું પ્રતિનિધિત્વ કરતા હતા કારણ કે ઈસ્ટ ઈન્ડિયા કંપની દુષ્કાળની પરિસ્થિતિમાં પણ તેમનું શોષણ કરતી રહી હતી. તિલ્કા માંઝી એટલા બહાદુર યોદ્ધા હતા કે તેમણે ૧૭૭૮માં ઈસ્ટ ઈન્ડિયા કંપનીને રામગઢ કેમ્પમાંથી હાંકી કાઢ્યા હતા. તે સમયે વોરેન હેસ્ટિંગ્સ આ પ્રદેશના લશ્કરી શાસનનું નેતૃત્વ કરી રહ્યા હતા. હેસ્ટિંગ્સે તિલકાના નેતૃત્વ હેઠળના બળવાને દબાવવા માટે કેપ્ટન બ્રુકના નેતૃત્વ હેઠળ ૮૦૦ બ્રિટિશ સૈનિકો મોકલ્યા. બ્રુકે આગામી બે વર્ષ સુધી સંથાલ બળવાનું દમન ચાલુ રાખ્યું. જેમ્સ બ્રાઉન તેમના અનુગામી બન્યા.

અંતે, ઓગસ્ટસ ક્લેવલેન્ડને બંગાળ પ્રાંતમાં ઈસ્ટ ઈન્ડિયા કંપનીના વહીવટકર્તા તરીકે નિયુક્ત કરવામાં આવ્યા. આમ તેઓ ભાગલપુર, મુંગેર અને રાજમહલ જિલ્લાઓમાં મહેસૂલ કલેક્ટર અને દિવાની અદાલત (સિવિલ કોર્ટ) ના ન્યાયાધીશ બન્યા. ક્લેવલેન્ડ સંથાલો પ્રત્યે પ્રતિકૂળ હતું. કમનસીબે, ક્લેવલેન્ડ ભારે પ્રયત્નો પછી કેટલાક આદિવાસીઓને પોતાની મદદ કરવા માટે મનાવવામાં સફળ રહ્યો. જોકે, તિલ્કા માંઝીને સ્થાનિક રહેવાસીઓનો ભારે ટેકો મળતો રહ્યો. તિલ્કા માંઝી પોતાના સમર્થકોને સંદેશા મોકલવા માટે પાંદડાનો ઉપયોગ કરતા હતા. તે પાંદડા પર "આપણે એક થવું જોઈએ" લખતો હતો. તિલ્કા માંઝી અને ઈસ્ટ ઈન્ડિયા કંપની વચ્ચેનો સંઘર્ષ વધુ ઉગ્ર બન્યો. કંપનીના સૈનિકો પર તિલ્કા માંઝીની સેનાએ તીર અને ધનુષ્યનો ઉપયોગ કરીને હુમલો કર્યો. તિલ્કા માંઝી પોતે સંઘર્ષનું નેતૃત્વ કરી રહ્યા હતા. ૧૩ જાન્યુઆરી, ૧૭૮૪ના રોજ, તિલ્કાએ ભાગલપુર પર હુમલો કર્યો. તે એક ઝાડ પર ચઢ્યો અને ક્લેવલેન્ડને ઝેરી તીરથી માર્યો. કંપની માટે આ એક મોટો અને અણધાર્યો ફટકો હતો.

કંપનીના સૈનિકોએ તિલ્કા માંઝીનો પીછો કર્યો પણ સફળ થઈ શક્યા નહીં. કંપનીના અધિકારીઓએ તિલ્કા માંઝીનું ઠેકાણું મેળવવા માટે આદિવાસીઓને લલચાવવાનું શરૂ કર્યું. કમનસીબે, એક આદિવાસી વ્યક્તિએ તિલ્કા માંઝી સાથે દગો કર્યો. બ્રિટિશ કમાન્ડર આયર કૂટે તિલ્કાના ઠેકાણા પર હુમલો કર્યો. તે રાત્રે, તિલ્કા અને તેની ક્રાંતિકારી સેના નૃત્ય અને ગીતો સાથે ઉજવણી કરી રહ્યા હતા અને અચાનક થયેલા હુમલાથી તેઓ બેભાન થઈ ગયા. તિલ્કા કોઈક રીતે બચી ગયો પણ તેના ઘણા સાથી સૈનિકો શહીદ થઈ ગયા. બાકીનાને કેદી બનાવવામાં આવ્યા હતા. તેણે સુલતાનગંજના પર્વતોમાં આશરો લીધો અને કંપની સેના પર તેના ગેરિલા હુમલાઓ ચાલુ રાખ્યા.

કંપનીએ સુલતાનગંજ અને ભાગલપુરના પર્વતીય વિસ્તારોને ઘેરી લીધા હતા. પર્વત તરફ જવાના બધા રસ્તાઓ બંધ કરી દેવામાં આવ્યા હતા જેથી કોઈપણ અનાજ કે અન્ય સહાય પર્વતો સુધી પહોંચી શકતી ન હતી. ગેરિલા સેના અવ્યવસ્થિત હતી. તેની સેના ભૂખમરાથી મરવા લાગી. તિલ્કાએ બ્રિટિશ દળોનો સામનો કરવાનો નિર્ણય કર્યો. સંથાલોએ કંપનીની સેના પર હુમલો કર્યો પરંતુ યુદ્ધ દરમિયાન તિલ્કા માંઝીને પકડી લેવામાં આવ્યો. એવું કહેવાય છે કે તેઓએ તેને ચાર ઘોડાઓ સાથે બાંધી દીધો અને તેને ભાગલપુર સુધી ખેંચી લઈ ગયો. માઈલો સુધી ખેંચાઈ જવા છતાં, તિલ્કા માંઝી જીવંત હતા. ૧૭૮૫માં જાન્યુઆરીના મધ્યભાગની આસપાસ, ભાગલપુરમાં, હજારો લોકો જોઈ રહ્યા હતા ત્યારે, તિલ્કા માંઝીએ ફાંસીનો ફાંસો ચુંબન કર્યો અને તેને એક વિશાળ વડના ઝાડ પર લટકાવી દેવામાં આવ્યો. તે સમયે તેમની ઉંમર માત્ર 35 વર્ષ હતી.

ઈસ્ટ ઈન્ડિયા કંપનીને લાગ્યું કે તિલ્કા માંઝીની ફાંસીથી કોઈપણ પ્રકારનો વિરોધ કે બળવો અટકી જશે. પણ તિલ્કા માંઝી તો ફક્ત શરૂઆત હતી. ભાગલપુર કોર્ટના પરિસરમાં તિલ્કા માંઝીની પ્રતિમા સ્થાપિત કરવામાં આવી છે. ભાગલપુર યુનિવર્સિટીનું નામ બદલીને તિલ્કા માંઝી રાખવામાં આવ્યું.

દક્ષિણ ગુજરાતમાં થતા શ્રીઅન્ન અને તેના લાભો

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ગુજરાતમાં વવાતા તૃણ ધાન્ય પાકોમાં મોખરાનું સ્થાન ધરાવે છે. નાગલી એ ડુંગરાઉ પ્રદેશમાં વસતા આદિવાસીઓનો મુખ્ય ખોરાક છે. ગુજરાત તેમજ સમગ્ર ભારતમાં વવાતા તૃણ ધાન્ય પાકોમાં નાગલીની પ્રતિ હેકટરે ઉત્પાદન ક્ષમતા સૌથી વધારે છે. નાગલીને અંગ્રેજીમાં ફીંગર મિલેટ અથવા આફ્રિકન મિલેટ અને ગુજરાતીમાં રાગી, બાવટાના નામથી પણ ઓળખવામાં આવે છે. ગુજરાતમાં વવાતા તૃણ ધાન્ય પાકોમાં મોખરાનું સ્થાન ધરાવે છે. નાગલી એ ડુંગરાઉ પ્રદેશમાં વસતા આદિવાસીઓનો મુખ્ય ખોરાક છે. ગુજરાત તેમજ સમગ્ર ભારતમાં વવાતા તૃણ ધાન્ય પાકોમાં નાગલીની પ્રતિ હેકટરે ઉત્પાદન ક્ષમતા સૌથી વધારે છે.

ગુજરાતમાં કુલ ૧૪,૧૬૧ હેકટર જમીનમાં નાગલીનું વાવેતર થાય છે. તેમાંથી ૧૮,૯૦૫ મે.ટન ઉત્પાદન મળે છે. ગુજરાતમાં નાગલીનું વાવેતર ડાંગ, વલસાડ, નવસારી, તાપી અને પંચમહાલ જીલ્લામાં થાય છે.

નાગલી વિવિધ પ્રકારની જમીન, આબોહવા તથા જયાં અન્ય પાક ઉગાડવાની શક્યતા ઓછી હોય તેવી ઓછી ફળદ્રુપ અને ઢાળવાળી જમીનમાં પણ થઈ શકે છે. પરંતુ સારા નિતારવાળી લાલ, રાખોડી રંગની, ગોરાડું અને હલકી અથવા મધ્યમ કાળી જમીન નાગલીને વધુ માફક આવે છે. ગરમ અને ભેજવાળી આબોહવામાં આ પાક સારો થાય છે.

આરોગ્ય અને પોષણ માટે મદદગાર કડી નાગલી :

આધુનિક રાસાયણિક પૃથ્થકરણની પદ્ધતિઓ અને ટેકનોલોજીને કારણે કેટલાક રોગોની સારવારમાં હર્બલ ઔષધીઓનો ઉપયોગ વધ્યો છે, સાથે-સાથે અસરકારક સારવાર પદ્ધતિઓ જેવી કે ભારતમાં આયુર્વેદ અને અન્ય ઔષધીઓનો પણ વિકાસ થયો છે. આમ હાલનાં સંજોગોમાં લોકોની આરોગ્ય અંગેની સજાગતા અને પોષકતત્વોથી ભરપુર નાગલીનું મહત્વ ખૂબ જ વધ્યુ છે.

(૧) વજન ઓછુ કરવા માટે :

નાગલીમાં ચોખા, ઘઉં અને મકાઈ કરતાં ચરબીનું પ્રમાણ ઘણું ઓછું હોય છે. આથી વજન ઘટાડવા માંગતા લોકો માટેનો શ્રેષ્ઠ વિકલ્પ છે. રાગીમાં ટ્રીપ્ટોફેન નામનો એમિનોએસિડ હોય છે જે ભૂખને ઓછી કરે છે અને વજનને નિયંત્રણમાં રાખે છે. બીજુ નાગલી ધીમેથી પચે છે અને તેમાં રહેલા રેસાનાં કારણે ભૂખની તૃમીનો અહેસાસ થઈ જવાથી વધુ કેલરીવાળો અને વધુ ખોરાક લઈ શકાતો નથી.

(૨) હાડકાં મજબૂત કરવા :

નાગલીમાં કેલ્શિયમ (૩૦૦-૩૫૦ મિ.ગ્રા./૧૦૦ ગ્રામ દાણા) તત્વ ભરપૂર પ્રમાણમાં હોવાથી નાના બાળકો અને વૃદ્ધો માટે ખૂબ જ ઉપયોગી છે. નાગલી/રાગી નાના બાળકોના હાડકાંનાં વિકાસમાં તેમજ હાડકાંની નબળાઈવાળા પુખ્તવયનાં લોકો માટે આર્શીવાદરૂપ છે. આમ રોજીંદા આહારમાં નાગલી/રાગીનું નિયમિત સેવન કરવાથી ઓસ્ટીયોપોરોસીસની શકયતા ઓછી થાય છે અને હાડકાં ભાંગવાનું જોખમ પણ ઓછું થાય છે. જો લોકોને દૂધની એલર્જી છે તેમના માટે નાગલી એક પૂરક સોર્સ છે.

(૩) મીઠી પેશાબ (ડાયાબીટીસ) નિયંત્રણમાં રાખે :

નાગલીનાં દાણામાં રેસાનું પ્રમાણ (૩.૬ ગ્રામ/૧૦૦ ગ્રામ દાણા) સારું છે. નાગલીનો ગ્લાયસેમીક ઈન્ડેક્ષ ખૂબ જ ઓછો હોવાના કારણે લોહીમાં સાકરનું પ્રમાણ ઘટાડી ઈન્સ્યુલીનના કાર્યક્ષમતા વધારે છે. આમ લોહીમાં સાકરનું પ્રમાણ જાળવી રાખે છે. નાગલીમાં રહેલ ફાયટોકેમીકલ્સ પાચનક્રિયા ધીમી કરે છે. આમ રાગી/નાગલી એ ડાયાબીટીસ અને મેદસ્વીતાવાળા દર્દીઓ માટે આશીવાદસમાન છે. સંશોધન દ્વારા ફલીત થયેલ છે કે ચોખા અને ઘઉં કરતાં નાગલી/રાગી આધારિત ખોરાક લેવાથી મીઠી પેશાબ (ડાયાબીટીસ)નાં દર્દીઓને ખૂબ જ ફાયદો થાય છે.

(૪) બ્લડ કોલેસ્ટ્રેરોલનું પ્રમાણ નીચું રાખે :

નાગલીમાં રહેલ એમીનો એસિડ જેવા કે લેકટીન અને મીથાઈઓનાઈન લીવરમાં વધારાની ચરબી દૂર કરે છે તથા થેરોનાઈન નામનો એમિનો એસિડ લીવરમાં ચરબી બનતી અટકાવી બ્લડ કોલેસ્ટેરોલનું પ્રમાણ નીચું રાખે છે. આમ નાગલી મનુષ્યનાં શરીરમાં કોલેસ્ટેરોલ વધવા દેતું ન હોવાથી હૃદયરોગનાં દર્દીઓ માટે ખૂબ ઉપયોગી છે.

(૫) લોહીની ઉણપ ઓછી કરે :

નાગલીમાં કેલ્શિયમ અને આર્યનનું પ્રમાણ અન્ય ધાન્ય પાક કરતાં વિપુલ પ્રમાણમાં હોવાથી હિમોગ્લોબીનની ઉણપ અને હાડકાંની નબળાઈવાળા લોકો માટે આશીર્વાદરૂપ છે. નાગલી એ શરીરમાં લોહી વધારનાર છે, જેથી રોજીંદા આહારમાં નિયમિત સેવન કરવાથી એનેમિયા રોગ સામે પ્રતિકારતા મળે છે. નાગલીનો બેબી ફુડ તરીકે ઉપયોગ થઈ શકે છે.

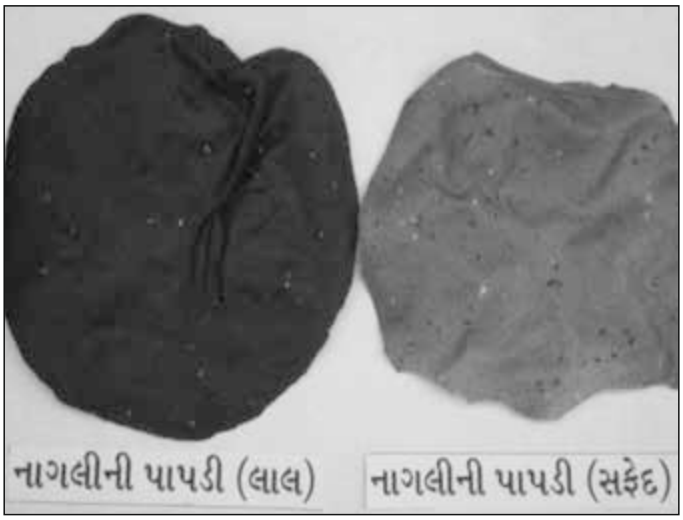
(૬) થાક દુર કરવા (રીલેકસેશન) માટે :

નાગલીમાં ભરપૂર પ્રમાણમાં પોષક તત્વો આવેલ હોવાથી તેનું નિયમિત સેવન કરવાથી ઘણા બધા રોગો સામે પ્રતિકારક શક્તિ મળે છે તથા થકાવટ ઓછી લાગે છે તેમજ માનસિક ચિંતા, તાણ અને ઈનસોમનીયાને પણ ઘટાડે છે. વળી નાગલી માઈગ્રેનના દુ:ખાવો દૂર કરવા માટે ઉપયોગી છે.

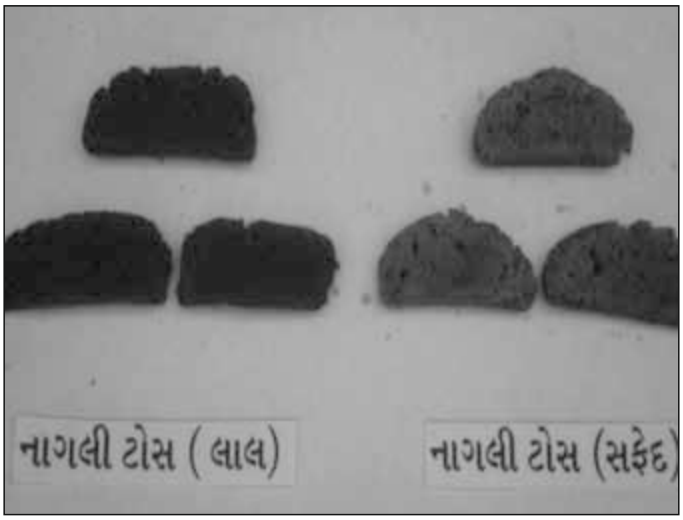
(૭) નાગલીમાં રહેલ પ્રોટીન/એમીનો એસિડ :

નાગલીમાં ટ્રીપ્ટોફેન, થેરોનાઈન, વેલાઈન અને આઈસોલ્યુસાઈન જેવા એમિનો એસિડ આવેલ છે. આઈસોલ્યુસાઈન સ્નાયુઓના દુ:ખાવા અને સાંધાના દર્દોમાં, લોહી બનાવવા, હાડકાંની મજબુતાઈ તથા ચર્મરોગ માટે ઉપયોગી છે. થેલાઈન નામનો એમિનો એસિડ ચયાપચયની ક્રિયા સુધારવા માટે, સ્નાયુઓના બંધારણ માટે શરીરનાં કોષો સુધારવા માટે ઉપયોગી છે. આ ઉપરાંત એમિનો એસિડ શરીરમાં નાઈટ્રોજનનું પ્રમાણ જાળવી રાખે છે. મોટા ભાગનાં ધાન્ય પાકોમાં ઉપયોગી મીથીઓનાઈન નામનો એમિનો એસિડ હોતો નથી પરંતુ નાગલીમાં રહેલ એમિનો એસિડ શરીરની જુદે-જુદી ક્રિયાઓમાં ઉપયોગી છે તથા શરીરમાંથી વધારાની ચરબી દૂર કરે છે અને શરીરને સલ્ફર પૂરો પાડે છે. ગ્લુથાથીઓનનાં ઉત્પાદન માટે સલ્ફર ઉપયોગી છે જે શરીર માટે કુદરતી એન્ટીઓક્સીડન્ટ છે.

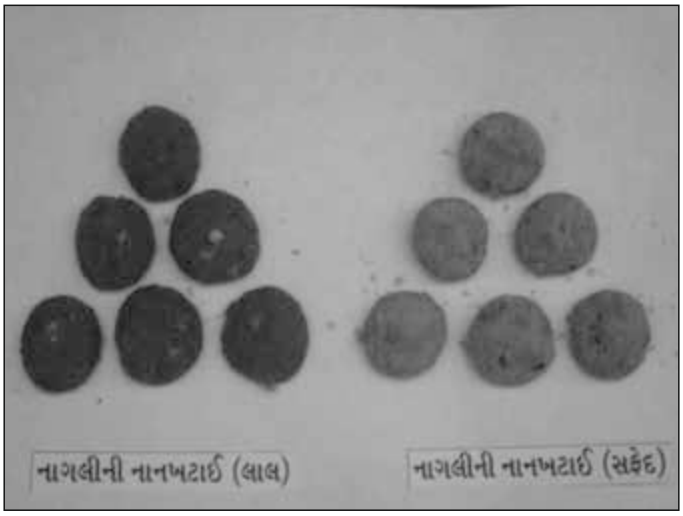
નાગલીમાંથી બનતી વિવિધ મૂલ્યવર્ધિત બનાવટો



નાગલીની પાપડી



નાગલીની ટોસ



નાગલીની નાનખટાઈ

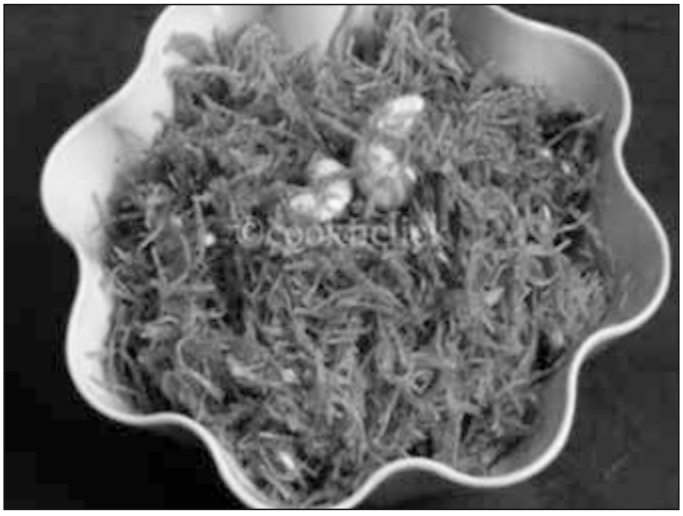
નાગલીની કુકીસ

વરીમાંથી બનતી વિવિધ મૂલ્યવર્ધિત બનાવટો

વરીની ભગર

વરીની ખીચડી

વરીની પેટીસ



સેવાઈ

પ્રોફેસર મેસન વાઘ (Mason Vaugh) ભારતમાં કૃષિ ઈજનેરી શિક્ષણના પિતા છે.

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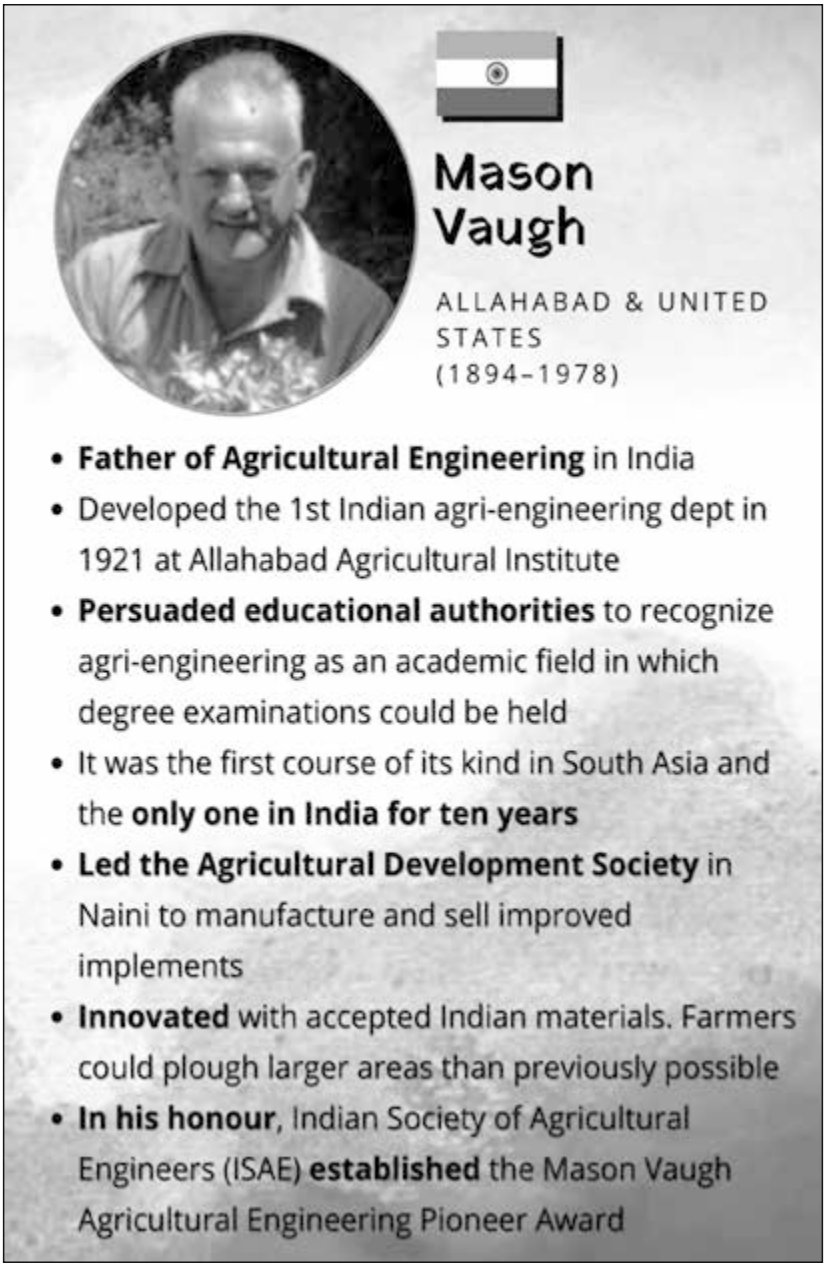
પ્રોફેસર મેસન વાઘનો જન્મ ૨૭ જૂન ૧૮૯૪ના રોજ યુનાઈટેડ સ્ટેટ્સ ઓફ અમેરિકાના બાન્ટેર, મિજૂરીમાં થયો હતો. યુનિવર્સિટી ઓફ મિજૂરી તેમની અલ્મા મેટર હતી જ્યાંથી તેમણે કૃષિ ઈજનેરીનું શિક્ષણ મેળવ્યું હતું. યુનાઈટેડ સ્ટેટ્સની બહાર એશિયામાં સૌ પ્રથમ વાર, અલ્હાબાદમાં અલ્હાબાદ એગ્રીકલ્ચરલ ઈન્સ્ટિટ્યુટ, હવે SHUATS, ખાતે કૃષિ ઈજનેરી વિભાગની રચના કરવામાં આવી હતી, જેમાં, થોડા સમય માટે ફાર્મ મશીનરીમાં તાલીમ અને ડિપ્લોમા પ્રોગ્રામ્સ કર્યા પછી, કૃષિમાં ડિગ્રી કોર્સ. એન્જિનિયરિંગની શરૂઆત 1942 માં થઈ હતી, જેની પ્રથમ બેચ 1944 માં બહાર આવી હતી. કૃષિ ઈજનેરી શિક્ષણનો ધીમે ધીમે વિકાસ થતો રહ્યો અને IIT ખડગપુર સહિત તમામ રાજ્યની કૃષિ યુનિવર્સિટીઓમાં કૃષિ ઈજનેરી વિભાગો/કૃષિ ઈજનેરી અને ટેકનોલોજીની સ્થાપના કરવામાં આવી. ટેકનોલોજી કોલેજોની સ્થાપના કરવામાં આવી છે અને પ્રાદેશિક, પ્રાદેશિક અને રાષ્ટ્રીય સમસ્યાઓ પર ધ્યાન કેન્દ્રિત કરીને શિક્ષણ, સંશોધન અને વિસ્તરણ કાર્યક્રમો ચલાવી રહી છે. પ્રોફેસર વાએ અલ્હાબાદમાં ખેતીની જરૂરિયાતો અનુસાર નાના કૃષિ સાધનો સાથે કામ શરૂ કર્યું. માટી ફેરવતા હળના વિકાસ દરમિયાન ખેડૂતોના ઉત્સાહને કારણે, માટી ફેરવતા હળને 'શાબાશ' અને 'વાહ વાહ' નામ આપવામાં આવ્યું હતું. હળ, હારો, ખેડુત અને કદાવર સાથે આગળ વધીને થ્રેશરનું કામ શરૂ કરવામાં આવ્યું. કૃષિ મશીનરીના ઉત્પાદન માટે કૃષિ વિકાસ સોસાયટી એડિયસ નૈનીમાં વર્કશોપ સ્થાપીને સાધનોના ઉત્પાદન, પ્રમોશન અને વેચાણનું કામ શરૂ કર્યું. તે ઘણા લાંબા સમય સુધી સક્રિય રહ્યું અને કૃષિ સાધનોના ઉત્પાદનમાં ઉત્પાદકો સતત વૃદ્ધિ પામતા રહ્યા. પંજાબના ઉત્પાદકોએ થ્રેશરના વિકાસમાં વ્યાપક રસ દાખવ્યો અને થ્રેસર દેશભરમાં લોકપ્રિય બન્યા અને સમગ્ર દેશમાં તેનું ઉત્પાદન અને ઉપયોગ થવા લાગ્યો.

હાર્વેસ્ટિંગ મશીનની બાબતમાં પ્રોફેસર વાઘની આગાહી કેટલી સાચી હતી? તેઓના જણાવ્યા મુજબ આજે મુખ્યત્વે ડાંગર અને ઘઉંના પાકની લણણી કમ્બાઈન હાર્વેસ્ટરથી કાપણી પરંતુ તમામ પ્રયત્નો છતાં કાપણી કરનારાઓનું વલણ પણ વાંચશો નહીં મળી. અલ્હાબાદમાં કામ કરે છે તે સમયે અને પછી પણ પ્રો પ્રોફેસર સીએમ જેકબ, પ્રોફેસર સિરિલ વી પાલ, ઈટાવા પાઈલટ આલ્બર્ટ મેયર, પ્રોજેક્ટના આચાર્ય Gan ડોક્ટર સેમ Higgin બોટમ અને ડૉ. એ.ટી. મોશર, કેરબીડીટીએમ., એન્જિનિયર જોન બેલીસ, ભારતીય કૃષિ સમાજ એન્જિનિયરિંગ એસ્ટાબ્લિશમેન્ટ વિશે ઉદ્યોગ સાથે સંકળાયેલા એન્જિનિયરો વી.કે જૈનના સંપર્કમાં રહો. એડીએસ બાદમાં આ કામ દુલાલ બોર પૂજારીને સોંપવામાં આવ્યું હતું. પ્રોફેસર મેસન વાઘએ તેમની આલ્મા મેટર યુનિવર્સિટી ઓફ મિઝોરીને તમામ કૃષિ સ્વરૂપો અને સંશોધન પત્રોના સેટ આપ્યા હતા. મી જુરી યુનિવર્સિટીએ તેમને લાઈફ ટાઈમ અચીવમેન્ટ એવોર્ડથી સન્માનિત કર્યા. ઈન્ડિયન સોસાયટી ઓફ એગ્રીકલ્ચરલ એન્જિનિયરિંગે 1972 માં તેની જબલપુર કોન્ફરન્સમાં પણ તેમનું સન્માન

કર્યું હતું. તેમની પુત્રીને આ સન્માન મળ્યું. જ્યારે મેં બનારસ હિંદુ યુનિવર્સિટીના નિવૃત્ત વરિષ્ઠ આચાર્ય કે.પી. રાયને પ્રોફેસર વા વિશેના તેમના સંસ્મરણો વિશે પૂછ્યું, ત્યારે તેમણે કહ્યું કે તેમના વિદ્યાર્થી તરીકે આવતા પહેલા વા સાહેબ અમેરિકા પાછા ગયા હતા અને તેમને સીધા સંપર્કની તક મળી ન હતી. પરંતુ તેમણે એક પ્રખ્યાત વાર્તા પ્રો. દિલ્હીમાં યમુનાનું સ્તર આટલું છે અને અલાહાબાદમાં આ ધ્યાન અંદાજ છે કે તેઓ તેમના ઘરની બહાર એક ફેકલ્ટી મેમ્બરને લઈ વધારવા સંસ્થા તરફ ઈમરજન્સી સાયરન પૂર દસ્તક દેતું હતું. ઘણા પણ પૂર દરમિયાન ડેમ પહેલા ભોંયરામાંના બિહારના ભૂકંપના તબાહીના સંદર્ભમાં, હિગિનબોટમને માટે વિનંતી કરી, ત્યારે સ્વીકાર કર્યો અને સ્ટેશન સહયોગી રાજેન્દ્ર ખેતીની જમીન, વિનાશના વિષય પર સેમે અલ્હાબાદમાં પ્રોફેસર મેસન ડબલ્યુ ભલામણોની ચર્ચા કરી. બાદમાં આ કામ દુલાલ આવ્યું હતું.



બાબત પર તેમનું અદ્ભુત બપોરે ૧:૦૦ વાગ્યે આવ્યા અને તેમની સાથે જઈ થોડી સુરક્ષા ગયા, પછી સંસ્થામાં વાગી. સંસ્થાના ડેમ પર લોકો જાણે છે કે જ્યારે તૂટે છે, ત્યારે પાણી સૌથી કાફેટેરિયામાં પહોંચે છે. કારણે સર્જાયેલી જ્યારે ગાંધીજીએ સેમ બિહારની સ્થિતિ જોવા સામ સાહેબે તેનો સહર્ષ પર તેમના ખાસ પ્રસાદને મળ્યા. ફળદ્રુપ ઈમારતો અને રેલ્વેના ચર્ચા કરતી વખતે, ડૉ. ઈમારતોના નિર્માણમાં દ્વારા ઉપયોગમાં લેવાતી તેમના જન્મદિવસ બોર પૂજારીને સોંપવામાં

તેમના જન્મદિવસ નિમિત્તો, વ્યવસાય, ભારતમાં કૃષિ ઈજનેરી શિક્ષણની રજૂઆત માટે આભારી, તેના પિતાને આદરપૂર્વક યાદ કરે છે અને તેમના જન્મદિવસ પર દરેકને અભિનંદન આપે છે. કૃષિ ઈજનેરી કૃષિને સમૃદ્ધ કરવા માટે હંમેશા તૈયાર છે. નિમિત્તે, વ્યવસાય, ભારતમાં કૃષિ ઈજનેરી શિક્ષણની રજૂઆત માટે આભારી, તેના જનકને આદરપૂર્વક યાદ કરે છે અને તેમના જન્મદિવસ પર દરેકને અભિનંદન આપે છે. કૃષિ ઈજનેરી કૃષિને સમૃદ્ધ કરવા માટે હંમેશા તૈયાર છે.

78th Independence Day Celebration at Navsari Agricultural University Dediapada

Seventy eighth independence day was celebrated at College of Agricultural Engineering &Technology (CAET) and Polytechnic Agricultural Engineering (PAE), Navsari Agricultural University, Dediapada with the hoisting of flag by Dr P K Shrivastava, Dean, CAET, Dediapada. The day started with the *Tiranaga Yatra* by students, faculty members and staff of the college which started from the College to the *Yaha Mogi Chowk*, across the Dediapada town and back. After hoisting the national flag, all assembled in the foyer of the College for celebrations. Students welcomed the Speaker & Chief Guest of the function Shri. Niravbhai Patel, Teacher, Shravan Vidyadham and *Pranat Sah Baudhik Pramukh*, *Rastriya Swayam Sevak Sangh*, as well as Dr P. K. Shrivastava, Dean, CAET; Dr Alok Singh, Principal, PAE; Mrs. Minaxi Tiwari, Scientist, Krishi Vigyan Kendra (KVK); all faculties, regular and contractual staff of CAET, PAE and KVK. Prior to the day students of CAET and PAE decorated the college with Rangoli, national flag and slogans of great national leaders.

The function began with the speech of student Sneh Patel, V Sem. B.Tech., *Khub ladi mardanti….Jhansi ki Rani..* poem of Subhadhra Kumari Chouhan by Neha Morya III Sem. B.Tech., patriotic song by Asiti Patel, Sunakshi Vasava, Dhruvi Patel III Sem. B.Tech.; dance by Vidhi Patel III Sem. B.Tech., Hetvi Kapatel III Sem. Diploma.; short speech on freedom fighters by Neha. Later the Chief Guest Shri. Niravbhai delivered a speech emphasising on (1) rising above discriminations of caste, creed and religion; (2) importance of preserving environment by restricting the use of plastics and planting trees; (3) prefer use of Swadeshi products and (4) to remember Bharat Mata – United India at all times for making the country the developed nation by 2047. Dr. Shrivastava in his presidential address stressed on the significance of celebrating the day and stressed on the invaluable sacrifices and martyrdoms of thousands of known and unknown soldiers, to retain countries independence. He highlighted the dangers of falling in the trap of inimical foreign forces who exploit the divisive tendencies amongst us, with an objective of denting the rising national economy. He persuaded that presently contribution of students for sustaining independent India is by focussing on their studies, perusing games and hobbies and remaining in the campus to avail the opportunities provided by the institutes, for remaining competitive in the job market. Dr Alok Singh proposed the vote of thanks and acknowledged the contributions of all students, NSS nodal officers Dr Arun Lakkad and Er. Vibhuti Patel, Dr. S G Patel, Mr. Jignesh Gamit and all those who contributed their valuable time and energies for coordinating the celebrations of the day. He added that the real independence for young students will be to remain focused on academics and not to lose their mental independence by falling in the trap of mobile and social media which propagates misinformation and diverts minds from their main objective. In the second half of the day a patriotic movies Veer Sawarkar was showed in the college hall.


NATIONAL SERVICE SCHEME (N.S.S.)
REGULAR ACTIVITIES


15th August 2024

76th Republic Day Celebration at CAET Campus Dediapada

Seventy sixth Republic Day was celebrated by the students and staff of College of Agricultural Engineering and Technology (CAET) and Polytechnic in Agricultural Engineering (PAE) at Navsari Agricultural University (NAU) campus, Dediapada, Narmada District, with much fanfare. The day started with flag hoisting by Dr. P. K. Shrivastava, Dean, CAET followed by national anthem and his address to the gathering. Later students of the college performed following items filled with nationalistic fervor.

Speech on republic day	Gungun Sisodiya	B.Tech. (I Sem.)
Rani Laxmibai	Neha Maurya	B.Tech. (IV Sem.)
Ae mere Vatan ke logon	Supriya Dash	B.Tech. (I Sem.)
Aa Desh mere…	Supriya Dash, Trisha Patel, Mallika Patel and Riya Chaudhari	B.Tech. (I Sem.)
Desh bhakti poem	Gungun Sisodiya	B.Tech. (I Sem.)
Anchoring	Roshni Kumari & Gungun Sisodiya	B.Tech. (IV Sem.) and B.Tech. (I Sem.)

On the occasion, an online Guest lecture on "Indian constitution and its adoption on 26th Jan 1950" was delivered by respected Mrs. Mala Sharma, Accomplished Teacher, New Delhi which was very informative. At the end Dr Alok Singh, Principal, PAE, summed up the programme and thanked Mrs Mala Sharma for her enlightening lecture.

Later as a part of the celebration, a motivational biographical sports drama, film Chandu Champion, released in 2024, written and directed by Kabir Khan and produced by Sajid Nadiadwala. The film showed his determination of Murlikant Petkar (acted by Kartik Aaryan), who won Olympic Gold with a world record in 50m freestyle swimming event in 1972 Summer Paralympics. He was conferred with Padma Shri by the President, Ram Nath Kovind in 2018, fifty years after his achievements. True story of a soldier coming from a small village in Maharashtra, represented India in boxing at the International Services Sports Meet 1964 in Tokyo, got severely injured in the Indo-Pakistani war of 1965, with a bullet injuring his spine, rendering him a paraplegic. He was admitted to an infirmary for the war wounded, where, depressed at his condition attempted suicide. His former coach Tiger Ali visited him and inspired him to compete in the Paralympics.

In the afternoon Republic Day Cricket match was held between Students and Staff, which was won by the staff in a nail biting finish. The role of contractual young staff from surrounding tribal villages is the real winner of the 76th republic day match, proving the presence of talent in tribal districts. The whole programme was efficiently coordinated by Ms. V. A. Patel, Assistant Professor, Mr. Jignesh N Gamit, and team which with the support of students and staff.


કૃષિ ઇજનેરી અને ટેકનોલોજી કોલેજ

NATIONAL SERVICE SCHEME (NSS)

NAME OF UNIT: College of Agricultural Engineering and Technology, NAU & Polytechnic Agricultural Engineering, NAU Dediapada

Ek Ped Maa Ke Naam

On the occasion of Prime Minister Narendra Modi's Birthday trees were planted by the students, faculty members and staff of College of Agricultural Engineering and Polytechnic in Agricultural Engineering. The campaign initiated by Shri Narendra Modi "*Ek Ped maan ke naam"* on the occasion of World Environment Day, to give thrust for increasing the forest cover across the nation. Shri Modi's planted a Peepal tree at Buddha Jayanti Park in Delhi. He urged all to contribute in making our planet better and informed that in the last decade, India undertook numerous collective efforts which have led to increased forest cover across the nation. As part of the *'Ek Ped Maa Ke Naam'* campaign, more than 1000 plants of saplings of Mango – Kesar and Baramasi, Pendula, Amla, Peepal, Arjun Sadad, Jamun, Vad, Shami, Bael, Cassia fistula were planted in the Dediapada campus during "*Van Mahotsav - 2024*" celebrations.

10th International Yoga Day Celebration

International yoga day was celebrated on 21st June, 2024, Yoga session was organized at CAET and PAE campus Dediapada from 7.00 am onwards. Total 60 students and 12 staff members participated in the celebrations. Dr. P.K. Shrivastava, Dean and Principal, College of Agricultural Engineering and Technology elaborated importance of yoga in daily life and also the significance of international day of Yoga.

PAE student Ray Jagrat Won University Surya Namskar Championship

Butterfly Assan

Trikon assan

Ardha chakra assan

During 2024-25, NSS volunteers of the Units of College of Agricultural Engineering and Technology & Polytechnic Agricultural Engineering, Dediapada, NAU conducted several awareness programmes as well as participated in Special Camp from Feb. 26 to Mar. 3, 2024

Sports and Games

- College of Agricultural Engineering & Technology and Polytechnic Agricultural Engineering organized annual sports week in which volleyball, badminton, cricket and various games were organized from May 7 to 12, 2024 at Dediapada campus. In the closing ceremony, prizes trophy and medal were distributed to the winners by Mr. Prakash Pandya, Police Inspector Dediapada & Chief guest of the function and Principal & Dean Dr. P. K. Shrivastava.

Volleyball tournament

Cricket Winners

Cricket Runner's

Memento's presented to Chief Guest Mr. Prakash Pandaya, PI, Dediapada

Prize distribution to student's

Basketball University Player's

Excellent Poster Winner

Winners of Table Tennis

Winners of Table Tennis

Cricket

Volleyball

Glimpse of Annual Function *TARANG 2K24*

Glimpse of Annual Function

TARANG 2K24

SIGNATURE DAY

TRADITIONAL DAY

B.Tech (Agricultural Engineering)

Passed out batch of 2024

Name	:	**Arpit Donga Prakashbhai**
Registration no.	:	3050920002
Contact no.	:	8469073545
Date of Birth	:	21-07-2003
Address	:	B-603, Govindji residency, Viti Nagar Circle, Opposite Navajivan Hotel, Sathana Jakatnaka, Surat-395006
Qualification	:	B.Tech (Agril. Engg) (Present)

Name	:	**Ayush Rasikbhai Patel**
Registration no.	:	3050920001
Contact no.	:	6352099637
Date of Birth	:	04-04-2003
Address	:	At Post Panar, Juni high school faliya, Panar Jalalpore, Navsari
Qualification	:	B.Tech (Agril. Engg) (Present)

Name	:	**Gamit Khushbu Raysingbhai**
Registration no.	:	3050920003
Contact no.	:	7574072965
Date of Birth	:	10-02-2002
Address	:	21,Gurukrupa society, vyara Di:Tapi. Pin code: 394650
Qualification	:	B.Tech (Agril. Engg) (Present)

Name : **Kedar PankajKumar Joshi**
Registration no. : 3050920004
Contact no. : 9265851354
Date of Birth : 13-02-2003
Address : 139/1662 Karnavati-ll Apartment, Paras Nagar, Sola Road, Naranpura, Ahmedabad
Qualification : B.Tech (Agril. Engg) (Present)

Name : **Patel Divya Bhaveshkumar**
Registration no. : 3050920005
Contact no. : 9638144545
Date of Birth : 05-03-2003
Address : Samaj Mandir Faliya, Abrama, Di.: Navsari
Qualification : B.Tech (Agril. Engg) (Present)

Name : **Nirav Sureshbhai Patel**
Registration no. : 3050920006
Contact no. : 9662658643
Date of Birth : 24-03-2003
Address : Antaliamangaldas Beside Iti Bilimora-396325 Ta:-Gandevi Dis:-Navsari Gujarat
Qualification : B.Tech (Agril. Engg) (Present)

Name : **Patel Truptiben Bhupendrakumar**
Registration no. : 3050920007
Contact no. : 9313390439
Date of Birth : 16-05-2003
Address : Patel Faliya, Motivalzar, Ta:- Vansda, Di:- Navsari
Qualification : B.Tech (Agril. Engg) (Present)

Name : **Rajpara Prashant Vikram Bhai**
Registration no. : 3050920008
Contact no. : 9106956327
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Address : Pithdaai Soc-2, Mahika Rajkot 360003
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Name : **Parthivkumar Rameshbhai Vasava**
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Contact no. : 7984781415
Date of Birth : 05-10-2002
Address : At. Po - Borda, Ta - Songadh, Dist - Tapi, Pin Code - 394670
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Name : **Pragneshkumar Maheshbhai Vasava**
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Name : **Dharmik Chandubhai Patel**
Registration no. : 5050921001
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Address : C-8,Ayush-99,oppo New Shreenathji Haveli, Near Jivanvadicircle, Nikol gam road, Nikol, Ahmedabad-382350
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Name	:	**Rathod Kinjal Pratapbhai**
Registration no.	:	5050921002
Contact no.	:	9909156048
Date of Birth	:	12-06-1999
Address	:	Viratnagar Society, Kodinar, Di.: Gir Somnath
Qualification	:	B.Tech (Agril. Engg) (Present)

Name	:	**Maulik Maganbhai Sakariya**
Registration no.	:	5050921003
Contact no.	:	9979374958
Date of Birth	:	19-11-2000
Address	:	Mandasan, Taluka : Jamjodhpur, Dis : Jamnagar, Pin: 360480
Qualification	:	B.Tech (Agril. Engg) (Present)

FARMING
is not just a
JOB
it's a
WAY OF LIFE

Faculty of Agricultural Engineering and Supporting Staff at Dediapada Campus

S.No.	Name	Designation	Specialization
1	Dr. P. K. Shrivastava	Principal & Dean	Ph.D. (Ag. Engg.) – Soil & Water Conservation Engineering
2	Dr.A. P. Lakkad	Head (SWC) & Associate Professor	Ph.D. (Ag. Engg.) – Soil & Water Conservation Engineering
3	Dr. K. N. Sondarva	Head (I&D) & Assistant Professor	Ph.D. (Ag. Engg.) – Soil & Water Conservation Engineering
4	Dr. H. Sanchavat	Head (FMP) & Associate Professor	Ph.D. (Ag. Engg.) – Farm Machinery & Power / Energy
5	Dr. S. Jena	Assistant Professor	Ph.D. (Ag. Engg.) – Farm Machinery & Power
6	Dr. S. N. Singh	Head (FPE) & Assistant Professor	Ph.D. (Ag. Engg.) – Ag. Process & Food Engineering
7	Er. R. G. Burbade	Assistant Professor	M. Tech (Agril. Process & Food Engg.)
8	Dr. A. Singh	Principal, PAE & Associate Professor	Ph.D. (Ag. Engg.) – Renewable Energy
9	Dr. S. H. Sengar	Head (RE) Professor	Ph.D. (Ag. Engg.) – Renewable Energy
10	Er. T. V. Chavda	Assistant Professor	Ph.D. (Ag. Engg.) – Renewable Energy
11	Er. S. G. Patel	Assistant Professor	MCA (computer science)
12	Er. V. A. Patel	Assistant Professor	M. Tech. (Power system)
13	Er. B. S. Patel	Assistant Professor	M. Tech. (Thermal Science)
14	Mr. Kiran Vasava	Assistant Professor (Contractual)	M.Sc. (Mathematics)
15	Dr. S. P. Singh	Assistant Professor (Contractual)	Ph.D. (Ag. Engg.) – Civil
16	Mr. A. M. Patoliya	Steno Grade -2	Diploma (Ag. Engineering)
17	Mr. M. D. Patel	Demonstrator	B.E. (Electrical Engineering)
18	Mr. A. J. Dhimmar	Demonstrator	B.Sc. Physics
19	Mr. Jignesh Gamit	Sr. Clerk	B.Ed.
20	Mr. Jitesh Vasava	Jr. Clerk	Diploma (Electrical Engineering)

Students Representative Council - 2024

Faculty - CAET

Sr. No.	Name	Designation	Activities
1	Dr. P. K. Shrivastava	Dean & Principal	President - SRC
2	Dr. S. H. Sengar	Professor	Chairman - SRC
3	Dr. Hitesh Sanchavat	Associate Professor	Co- Chairman – SRC, College Magazine, Badminton
4	Dr. Alok Singh	Associate Professor	Table Tennis
5	Dr. S.N. Singh	Assistant Professor	Quiz competition
6	Dr. Priti Jaiswal	Assistant Professor	Badminton, Gujarati Press Media
7	Dr. M.G. Varma	Assistant Professor	Dance Drama, Mono Acting Debate, Elocution, Extempore
8	Er. V. A. Patel	Assistant Professor	Cultural Activity, Dance Drama, Mono Acting Girls Volleyball,
9	Er. S. G. Patel	Assistant Professor	Chess
10	Er. Ketan Sondarva	Assistant Professor	Basketball & Athletics
11	Er. R.G. Burbade	Assistant Professor	Kabaddi
12	Er. T. V. Ch avada	Assistant Professor	Kho Kho
13	Er. B.S. Patel	Assistant Professor	Volley ball
14	Dr. S. Jena	Assistant Professor	English Press and Media
15	Mr. Amit Patoliya	Demonstrator	Athletics
16	Mr. Ankur Dhimmar	Demonstrator	Athletics
17	Mr. Jignesh Gamit	Sr. Clerk	Cricket & Gymkhana
18	Mr. Sujit Patel	Electrician	Annual function sound & light system
19	Er. Mehul Patel	Demonstrator	Cricket Sports Store In charge
20	Mr. Jitesh Vasava	Jr. Clerk	Gymkhana Treasurer

Student Representatives - CAET

Sr. No.	Name of Students	Semester	Activities
1	Rajpara Prashant Vikarambhai	8th	General Secretary
2	Patel Meet Vinodbhai	6th	Joint Secretary
3	Joshi Kedar Pankajkumar	8th	Cultural Secretary
4	Panchal Meet Kamleshbhai	6th	Joint Cultural Secretary
5	Patel Dharmik Chandubhai	8th	Sport Secretary (Outdoor)
6	Patel Dhruvin Hemantbhai	6th	Sport Secretary (Indoor)
7	Patel Ayush Rashikbhai	8th	Class Representative

Sr. No.	Name of Students	Semester	Activities
8	Gamit Khushbu Raysingbhai	8th	Class Representative Lady
9	Patel Shrey Bipinbhai	6th	Class Representative
10	Patel Priyanshi Shureshbhai	6th	Class Representative Lady
11	Amit Raj Jitendra Kumar	4th	Class Representative
12	Patel Miteshvariben Virunbhai	4th	Class Representative Lady
13	Kathiriya Jaykumar Vijaybhai	2nd	Class Representative
14	Patel Vidhi Dharmeshbhai	2nd	Class Representative Lady

Faculty : PAE

Sr .No	Name	Designation	Activities
1	Dr. Alok Singh	Principal	President, SRC, Table Tennis
2	Dr. Hitesh Sanchavat	Associate Professor	Chairman, SRC College Magazine, Badminton
3	Dr. S. H. Sengar	Professor	Co- Chairman
4	Dr. S.N. Singh	Assistant Professor	Quiz competition
5	Dr. Priti Jaiswal	Assistant Professor	Badminton, Gujarati Press Media
6	Er. V. A. Patel	Assistant Professor	Cultural Activity, Dance Drama, Mono Acting Girls Volleyball,
7	Er. S. G. Patel	Assistant Professor	Chess
8	Er. Ketan Sondarva	Assistant Professor	Basketball & Athletics
9	Er. R.G. Burbade,	Assistant Professor	Kabaddi
10	Er. T. V. Ch avda	Assistant Professor	Kho Kho
11	Er. B.S. Patel	Assistant Professor	Volley ball
12	Dr. S. Jena	Assistant Professor	English Press and Media
13	Mr. Amit Patoliya	Demonstrator	Athletics
14	Mr. Ankur Dhimmar	Demonstrator	Athletics
15	Mr. Jignesh Gamit	Sr. Clerk	Cricket & Gymkhana
16	Mr. Sujit Patel	Electrician	Annual function Sound system & Lighting etc
17	Er. Mehul Patel	Demonstrator	Cricket Sports Store In charge
18	Mr. Jitesh Vasava	Jr. Clerk	Gymkhana & Treasury

Student Representatives - PAE

Sr. No.	Name of Students	Semester	Activities
1	Parmar Pratik	4^{th}	General Secretary
2	Baria Gaurang	4^{th}	Joint Secretary
3	Rathod Irfan	4^{th}	Cultural Secretary
4	Rathva Parth	4^{th}	Joint Cultural Secretary
5	Chaudhari Ritul	4^{th}	Sport Secretary
6	Solanki Ronak	4^{th}	Joint Sport Secretary
7	Chaudhari Neel	4^{th}	Class Representative
8	Patel Hetvi	4^{th}	Class Representative Lady
9	Harsh Boricha	2^{th}	Class Representative
10	Naik Zooni	2^{th}	Class Representative Lady

M E D I A C O V E R A G E

THURSDAY, 16•05•2024

નવસારી કૃષિ યુનિવર્સિટી દ્વારા આયોજન કરાયું

દેડિયાપાડાની કૃષિ કૉલેજ ખાતે સ્પોર્ટ્સ વીકની ઉજવણી કરાઈ

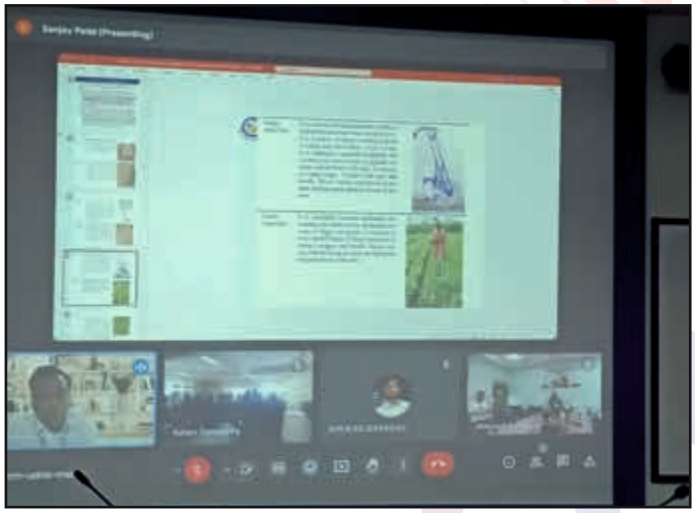
વિજેતા અને ભાગ લીધેલા વિદ્યાર્થીઓને શિલ્ડ અને મેડલ અપાયા

કૃષિ ઈજનેરી અને ટેકનોલોજી કોલેજ, નવસારી કૃષિ યુનિવર્સીટી, દેડિયાપાડા ખાતે સ્પોર્ટસ વીકની ઉજવણી બાદ ઈનામ વિતરણ કાર્યક્રમ યોજાયો હતો.

સ્પોર્ટ્સ વીકની ઉજવણીમાં વિજેતાને ઈનામો અપાયા હતા.

ડેડીયાપાડા કૃષિ ઈજનેરી અને ટેક્નોલોજી કોલેજ તથા પોલિટેક્નિક કૃષિ ઈજનેરી કોલેજ ખાતે આંતરરાષ્ટ્રીય યોગ દિવસની ઉજવણી કરાઈ


Ganesh Utsav Celebration

ISAE online lectures

NSS Activities

CONTACT DETAILS

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