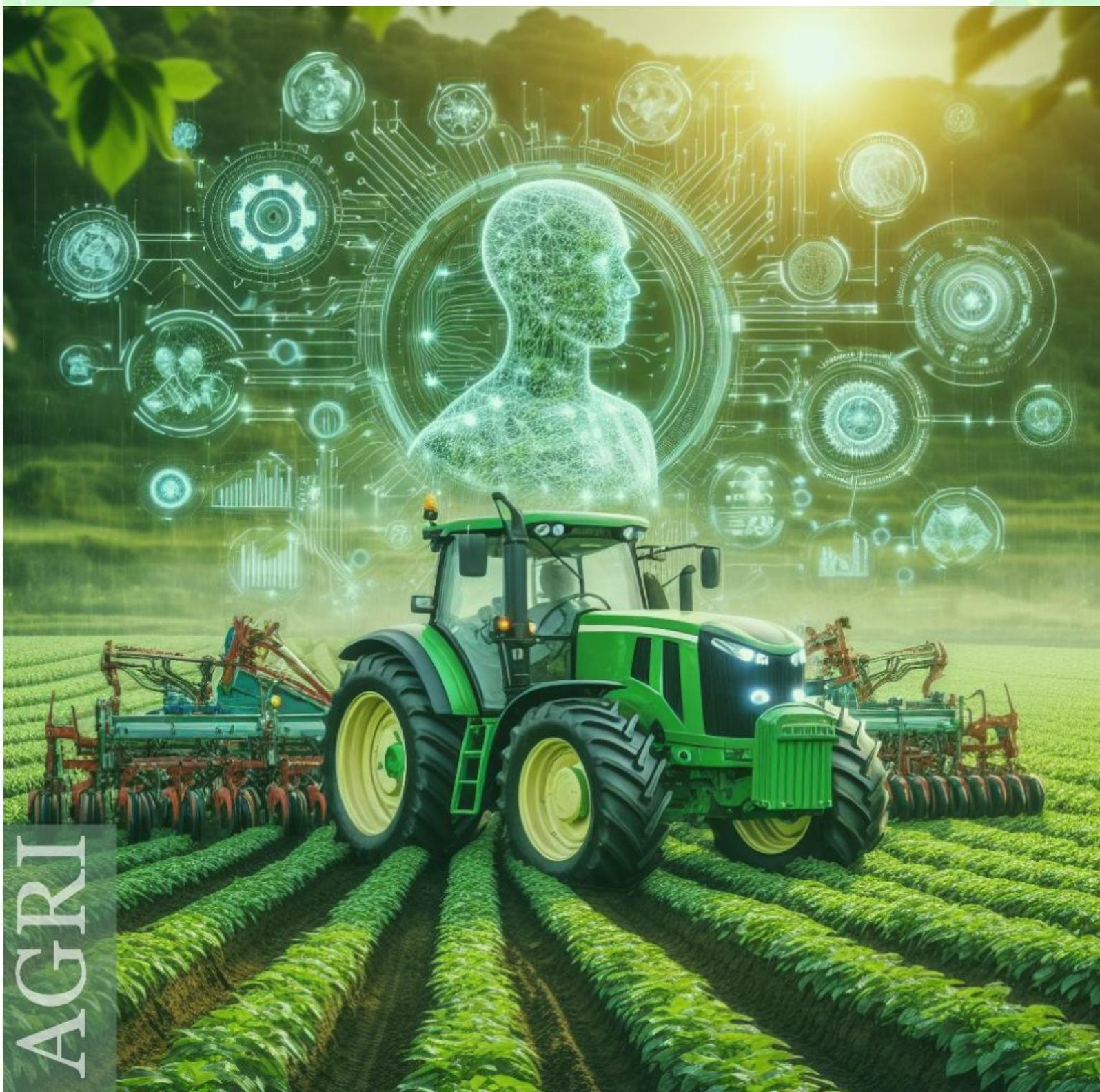


AGRI NEXUS

Volume 7 issue 1

2024–2025



AGRI

Department Vision and Mission

VISION

- To foster academic excellence by imparting knowledge in Agricultural Engineering to meet the ever-growing needs of the society.
- To provide quality education to produce agricultural engineers with social responsibility.

MISSION

- To excel in the thrust areas of agricultural engineering to identify and solve the real-world problems.
- To create a learner-centric environment by upgrading knowledge and skills to cater the needs and challenges of the society.

The graduates of Agricultural Engineering will be

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

- **PEO1: Core Competency:** Successful professional with core competency and inter-disciplinary skills to satisfy the Industrial needs.
- **PEO2: Research, Innovation and Life-long Learning:** Capable of identifying technological requirements for the society and providing innovative solutions to real time problems.
- **PEO3: Ethics, Human values and Entrepreneurship:** Able to demonstrate ethical practices and managerial skills through continuous learning

The students of Agricultural Engineering will be able to

PROGRAMME SPECIFIC OUTCOMES (PSO)

- **PSO1:** Design, analyze and apply the knowledge gained on agricultural machinery, tools, implements and production technologies to increase crop production, improve land use, soil nutrient and conserve resources like water, fertilizer and energy.
- **PSO2:** Apply the comprehensive knowledge of engineering properties of agricultural products for upgrading the unit operation and developing innovative process, value-added products, and advanced engineering technologies to meet the challenges in agriculture.

INDEX

S.NO	TOPICS	AUTHOR NAME	PAGE NO
1.	DESIGN AND MODIFICATION OF SINGLE ROW RIDGE AND FURROW POWER OPERATED WEEDER	BRINDHA BHARATHI P , GANIKA R HEMADHARSHINI V MARIA MIRZA J SANTHIYA RAGHAG ,DRSUVAIN K K	4
2.	STABILIZATION OF BANANA TREES USING A TRIPOD SUPPORT SYSTEM	GOBINATH T, SANDHIYA T, NISHMASHILFANAS,REVATHI PRIYA P, EZHILARASIP,,NITHIYA R DR. KOMALABARATHI P	4
3.	ISOLATION COPRA MACHINE: A REVOLUTION IN COCONUT PROCESSING	SAMEENA BEGUM A, SHALINI I, DEEPA T, SEETHALAKSHMI M , PRADEEP KUMAR K, VANISA S	5
4.	SESAME THRESHER: A GAME-CHANGER IN OILSEED PROCESSING	ABINAYA G., JANANI J., PRIYANKA R., SANTHIYA I. . PRADEEP KUMAR K, VANISHA S	6
5.	CROP MODELING	N. KAVINESH	7
6.	CROP DIVERSIFICATION IN AGRICULTURE	K. MEENAA	7
7.	AGRIVOLTAICS	R. PRIYANKA	7
8.	PRODUCTION OF FUEL BRIQUETTES FROM AGRICULTURAL RESIDUES	J. JANANI	8
9.	FARM AUTOMATION	S.GOWTHAM	8
10.	DESIGN AND DEVELOPMENT OF TAPIOCA STEM CUTTER	AGALYA S., KAVITHA V., MEGALA P., PAVITHRA S. PRASANTH M	9
11.	DESIGNING AND FABRICATING THELOW COST HAND OPERATED GRASS CUTTER	DHANUSHPRIYAN S., GOKUL P., NINIL H., SANTHOSH K., SUTHAKAR S. DR. SUVAIN K K	10
12.	ELECTRICITY GENERATION FROM PIPELINES	SUJIN P., DHARUN P., ABILASH V., AKASHRAJ S., SUBASH S., DR. AMBIKA D	10
13.	RAISING MEXICAN MINT AND FISH TOGETHER IN A SOILLESS SYSTEM	HARISH R., MAGESH A., RITHIKA T., SELIN PRINCY A. SRIDHARSHINI .M	10
14.	DESIGN AND DEVELOPMENT OF GROUNDNUT POD SEPARATOR	PRASANTH M, SANDHIYA DEVI P	11
15.	MODULAR LABOURLESS SOLUTION FOR NURSERY	KARTHIKEYAN Y., NISHANTHINI S., SHIBIARASI M., MOUNIKA K., MR. BRAGADEESWARAN T	13
16.	ஒருங்கிணைந்த பண்ணையம்	ஆர். எம். சுப்பிரமணியன்	14

DESIGN AND MODIFICATION OF SINGLE ROW RIDGE AND FURROW POWER OPERATED WEEDER

*Brindha Bharathi P, Ganika R ,Hemadharshini V Maria mirza J
Santhiya ragha G , Dr. K.K. Suvain*

The Modified Ridge and Furrow Power-Operated Weeder is an innovative agricultural tool designed to efficiently remove weeds and prepare beds between crops. Its compact size and ease of handling make it suitable for both small- and large-scale farmers. Equipped with a furrow blade, it not only removes weeds but also aids in bed preparation, enhancing its multifunctionality. Powered by a 2 HP petrol engine, this weeder significantly reduces labor dependency while increasing productivity. The modified ridges and furrows guide its operation, ensuring precise weed removal with minimal crop damage. Designed for row crops, it offers versatility across various farming conditions and helps reduce herbicide usage, promoting eco-friendly agriculture. Field evaluations demonstrate its effectiveness, with an 83% weeding efficiency and 72% field efficiency, ensuring optimal weed removal and improved crop health. Its effective field capacity of 0.049 ha/hr enables farmers to cover substantial land areas quickly, reducing labor costs and operational time.

The Modified Ridge and Furrow Power-Operated Weeder stands as a promising solution for farmers seeking cost-effective, efficient, and environmentally friendly weed control while enhancing overall farm productivity



Stabilization of Banana Trees Using a Tripod Support System

*Gobinath T, Sandhiya T, Nishma Shilfana S, Revathi Priya P, Ezhilarasi P., Nithiya R
Dr. Komalabarathi P*

Banana cultivation faces significant challenges due to plant lodging caused by strong winds and heavy fruit loads, leading to yield loss and economic setbacks for farmers. To address this issue, an innovative **Tripod Support System** has been developed to provide structural stability to banana plants, ensuring better growth and improved productivity.

The **Tripod Support System** consists of three sturdy poles arranged around the banana tree, forming a triangular base that distributes the plant's weight evenly. This setup prevents tilting or uprooting, particularly during adverse weather conditions. The support system is designed for **easy installation, cost-effectiveness, and reusability**, making it a practical solution for farmers.

Field trials have shown that using this system reduces plant damage, enhances fruit quality, and minimizes losses due to lodging. The **Tripod Support System** is a simple yet highly effective approach to **ensuring sustainable banana farming, reducing financial losses, and increasing overall farm efficiency**. By adopting this method, farmers can significantly improve the resilience of their banana crops and secure higher yields.

This innovative support mechanism is a **step forward in modern banana cultivation**, combining traditional farming wisdom with engineered stability to safeguard crops against natural threats.



Isolation copra machine: A Revolution in Coconut Processing

Sameena Begum A, Shalini I, Deepa T, Seethalakshmi M, Pradeep Kumar K

The **Isolation Copra Machine** is an innovative solution designed to efficiently remove the coconut shell from dried copra without causing damage, ensuring maximum yield and quality. Traditional de-shelling methods often result in significant losses due to heavy mechanical impact, increasing processing costs. This machine automates the process by using a precision-controlled rotational mechanism that gently separates the shell while preserving the integrity of the copra. Partially dried copra is manually loaded into the de-shelling chamber, positioned close to the drying oven for seamless processing. When the copra reaches an optimal moisture content of **35% (d.b.)**, it is transferred directly from the oven to the chamber, where the machine operates at a controlled speed of **10 RPM** for effective de-shelling. Compared to manual methods, this machine significantly reduces processing time, minimizes labor dependency, and prevents financial losses due to shell damage. Its **cost-effective and sustainable design** makes it suitable for both small- and large-scale coconut producers. By enhancing efficiency, reducing wastage, and improving the overall quality of

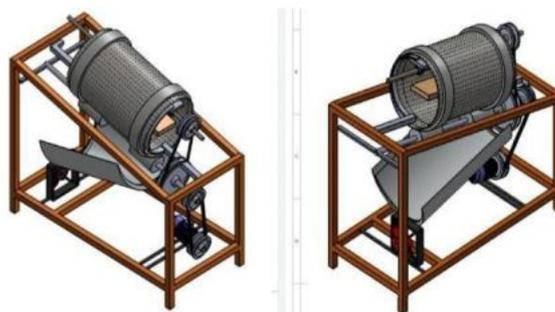
copra, the **Isolation Copra Machine** represents a major advancement in coconut processing, paving the way for a more profitable and sustainable coconut industry.



Sesame Thresher: A Game-Changer in Oilseed Processing

Abinaya G., Janani J., Priyanka R., Santhiya I. . Pradeep Kumar K, Vanisha S

Sesame (*Sesamum indicum*), known as the "Queen of Oilseeds," is widely cultivated for its high oil content and nutritional value. However, traditional sesame threshing is labor-intensive, time-consuming, and inefficient due to the uneven maturity of seeds. To address these challenges, we have developed a **portable sesame thresher** designed to enhance efficiency, reduce manual labor, and improve processing speed. This machine features a high-speed threshing mechanism that effectively separates sesame seeds from pods while minimizing seed damage. Its compact and lightweight design makes it easy to transport and operate, catering to both small and large-scale farmers. Compared to conventional methods, our innovation achieves a **71% cost reduction and 75% time savings**, significantly improving productivity. By ensuring uniform threshing with minimal effort, the portable sesame thresher helps farmers reduce post-harvest losses, lower production costs, and enhance market readiness. This innovation marks a breakthrough in sesame processing, offering a **sustainable, efficient, and farmer-friendly solution** that boosts productivity and profitability in the agricultural sector.



Crop Modeling

N. Kavinesh

Crop modeling is a valuable tool in modern agriculture, allowing scientists and farmers to simulate crop growth, development, and yields under various environmental and management conditions. By integrating data on factors such as weather, soil, and farming practices, crop models provide insights into how crops respond to changes in climate, water availability, and nutrient management. This helps in optimizing agricultural practices, predicting future yields, and making informed decisions to enhance productivity and sustainability. Crop models are also essential in addressing the challenges posed by climate change, as they allow for scenario analysis and the development of adaptive strategies to ensure food security in a rapidly changing world.

Crop Diversification in Agriculture

K. Meena,

Crop diversification in agriculture is a strategic approach to enhance productivity, improve resilience, and ensure sustainable farming practices. By cultivating a variety of crops instead of relying on a single crop, farmers can reduce the risks associated with market fluctuations, pest infestations, and changing climatic conditions. This practice promotes soil health through the natural cycling of nutrients, which can reduce the need for chemical fertilizers. Additionally, crop diversification supports biodiversity, providing habitats for beneficial insects and wildlife, which can contribute to natural pest control. Economically, it offers farmers the opportunity to tap into different markets, thereby increasing their income stability. As global challenges like climate change and food security become more pressing, crop diversification stands out as a vital tool for building more resilient agricultural systems.

Agrivoltaics

R. Priyanka,

Agrivoltaics is an emerging practice that integrates solar energy production with agricultural activities, offering a sustainable solution to land use challenges. By installing solar panels above crops, farmers can simultaneously generate renewable energy and cultivate plants, maximizing the productivity of their land. This innovative approach not only helps address the growing demand for clean energy but also provides benefits for agriculture. The shade from solar panels can protect crops from excessive heat and reduce water evaporation, potentially improving yields and conserving resources. While the initial investment in agrivoltaic systems may be high, the dual income streams from crop sales and energy generation make it an

attractive option for the future of farming. As research advances, agrivoltaics is poised to play a crucial role in enhancing food security while contributing to global sustainability goals.

Production of Fuel Briquettes from Agricultural Residues

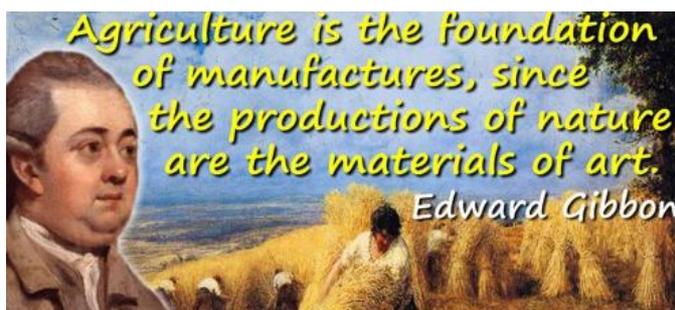
J. Janani,

Fuel briquettes made from agricultural residues offer a sustainable solution for energy production, addressing both waste management and renewable energy needs. In agricultural regions, residues like rice husk, sugarcane bagasse, groundnut shells, and maize cobs are often underutilized or discarded. By compressing these materials into briquettes, they can be repurposed as a cost-effective and eco-friendly fuel source. The production process involves collecting, drying, and shredding the residues, followed by compacting them using specialized machines. This eliminates the need for binding agents, as the high pressure and heat generated during the process cause natural lignin in the biomass to act as a binder. The result is dense, energy-rich briquettes that can be used for cooking, heating, or even industrial applications.

Farm Automation

S. Gowtham,

Biochar is a carbon-rich solid product produced from the pyrolysis of biomass residues. It can be generated from any ligno-cellulosic biomass, including brushwood, waste from the harvest of timber, crop leftovers like rice and wheat straw, weedy shrubs and grasses, as well as animal manure. Pyrolysis is a thermochemical technique that produces biochar, bio-oil, and syngas derived from biomass. The process involves heating and thermally decomposing biomass under anaerobic conditions or limited oxygen supply with temperatures ranging between 400°C and 1200°C. The absence of oxygen enables biomass heating beyond its thermal stability limit, causing the creation of more robust products, including solid residues. The use of biochar in agricultural practices is a promising new technology with tremendous potential to maintain and enhance soil quality and nutrient cycling



DESIGN AND DEVELOPMENT OF TAPIOCA STEM CUTTER

Agalya S., Kavitha V., Megala P., Pavithra S. Prasanth M

The **Tapioca Stem Cutter** is an innovative agricultural machine designed to **streamline and mechanize** the cutting process of tapioca (*Manihot esculenta*) stems for propagation. Tapioca, a vital staple crop in tropical regions, is primarily cultivated for its **starch-rich tuberous roots**, which serve as a key ingredient in food processing industries. However, the traditional method of cutting tapioca stems manually is highly **labor-intensive, time-consuming, and inconsistent**, leading to uneven cuttings that may affect plant growth and yield. To address this challenge, we have designed and developed a **specialized Tapioca Stem Cutting Machine** that ensures **efficiency, precision, and ease of operation**.

The **Tapioca Stem Cutting Machine** is equipped with **high-precision blades and automation technology**, allowing it to cut tapioca stems into **uniform sections** suitable for replanting. The machine is designed to handle stems of **varying thickness and length**, with **adjustable settings** that provide flexibility for different cutting requirements. Safety is a top priority, and the machine incorporates **protective measures** to ensure user-friendly handling, reducing the risk of injuries during operation. Additionally, our research involved a detailed analysis of **tapioca stem anatomy** to determine optimal cutting angles and blade speeds, ensuring **minimal damage to plant tissues** and improving the success rate of propagation.

By automating the cutting process, the **Tapioca Stem Cutter** offers **numerous advantages** over traditional manual methods. It significantly **reduces labor costs and time consumption**, allowing farmers to process larger quantities of tapioca stems with minimal effort. The machine also **ensures consistency in cutting**, leading to **uniform planting material** that enhances crop establishment and productivity. Moreover, by optimizing stem utilization, this innovation minimizes wastage and **improves the overall efficiency** of tapioca cultivation.



The introduction of this **specialized cutting machine** is set to revolutionize tapioca farming by making propagation **faster, safer, and more efficient**. With its **precision cutting, user-friendly design, and adaptability**, the **Tapioca Stem Cutter** stands as a valuable tool for farmers looking to enhance their productivity and adopt **modern agricultural mechanization**.

DESIGNING AND FABRICATING THE LOW COST HAND OPERATED GRASS CUTTER

Dhanushpriyan S., Gokul P., Ninil H., Santhosh K., Suthakar S. Dr. Suvain K K

The availability of **forage** is crucial for cattle rearing, but small-scale farmers often struggle with traditional **manual sickles** or **high-cost brush cutters** that are difficult to use and transport. To address this challenge, a **low-cost, hand-operated grass cutter** can be designed and fabricated, offering a **portable, efficient, and affordable** solution. The cutter features a **rotating blade mechanism** that efficiently cuts grass when the handle is pulled, ensuring **ease of operation** for farmers.

To enhance efficiency and reduce manual effort, the cutter can be **powered by a lithium-ion battery**, allowing farmers to **cover a larger area** with minimal physical strain. The design should incorporate **adjustable cutting heights** to accommodate different types of grasses and forage, ensuring **versatility** in agricultural applications. Additionally, essential **safety features**, such as **blade guards and safety switches**, can be included to prevent accidents and ensure safe operation.

Once developed and tested, the **grass cutter** can be marketed as a **cost-effective alternative** for small-scale farmers who require an **affordable, easy-to-use, and efficient** solution for forage cutting. Its **lightweight and compact design** makes it **easy to carry, store, and transport**, further increasing its appeal. With the right **design, efficiency, and marketing**, this innovative tool has the potential to become a **valuable addition to any farmer's toolkit**, significantly improving productivity and **reducing dependency on labor-intensive cutting methods**.



ELECTRICITY GENERATION FROM PIPELINES

Sujin P., Dharun P., Abilash V., Akashraj S., Subash S., Dr. Ambika D

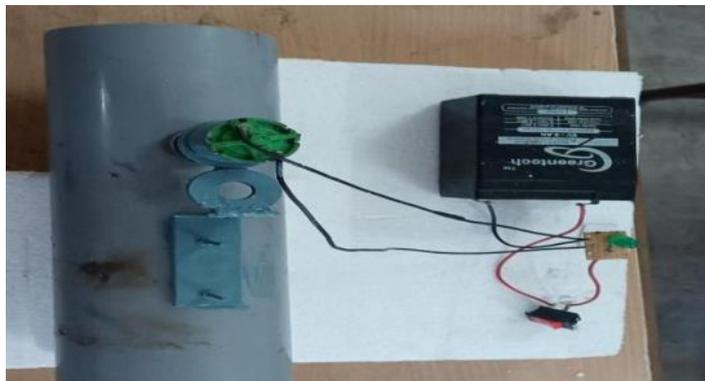
Generating electricity from pipelines is an innovative approach to harnessing **wasted kinetic and potential energy** from flowing fluids, such as **water, gas, or other pressurized liquids**, to produce electrical power. This process utilizes **hydroelectric turbines, pressure-driven generators, or micro-turbine systems** installed within the pipeline network. As the fluid moves

through the pipeline, it spins the turbines, converting **mechanical energy into electricity** through an integrated generator system.

This method is particularly beneficial for **water distribution systems, industrial pipelines, and natural gas networks**, where excess pressure or flow energy is typically lost. By **recovering and utilizing** this energy, pipeline electricity generation contributes to **sustainable energy solutions** while **reducing overall operational costs**. Additionally, it can be integrated into **smart grid systems** for efficient energy distribution.

The advantages of this technology include **low environmental impact, continuous energy generation, and minimal maintenance requirements** compared to traditional power sources. Furthermore, these systems can be customized based on pipeline specifications, ensuring **optimal energy recovery** without disrupting fluid transport. Implementing **electricity-generating pipelines** on a large scale can significantly enhance **renewable energy production, reduce carbon footprints, and improve energy efficiency** in various sectors, including agriculture, municipal water supply, and industrial operations.

With proper design and implementation, **pipeline energy recovery systems** can become a key component of **sustainable infrastructure**, helping to generate **clean, renewable electricity** while utilizing existing resources more effectively.



RAISING MEXICAN MINT AND FISH TOGETHER IN A SOILLESS SYSTEM

Harish R., Magesh A., Rithika T., Selin Princy A.Sridharshini .M

Aeroponics and aquaponics are innovative, resource-efficient, and sustainable farming techniques that eliminate the need for soil while maximizing productivity. These soilless systems have gained popularity due to their ability to conserve water, reduce space requirements, and produce high yields compared to traditional farming methods.

Aeroponics is a method where plants grow without a growing medium, and their roots are suspended in the air while being periodically misted with a nutrient-rich solution. This technique ensures optimal nutrient absorption, promotes faster growth rates, and significantly reduces water usage.

Additionally, aeroponic systems minimize soil-borne diseases and pests, making them an ideal solution for urban farming and controlled-environment agriculture.

Aquaponics, on the other hand, integrates fish farming with hydroponic plant cultivation in a closed-loop ecosystem. In this system, fish waste serves as an organic nutrient source for plants, while the plants naturally filter and purify the water, creating a self-sustaining cycle. This method significantly reduces the need for chemical fertilizers and pesticides while promoting sustainable food production. By combining these two technologies, Mexican Mint (*Plectranthusamboinicus*) and fish farming can thrive together in a highly efficient system. Mexican Mint, known for its medicinal properties, aromatic leaves, and culinary uses, grows well in aeroponic conditions where its roots receive a balanced nutrient supply from the aquaponic system. Meanwhile, fish species such as tilapia, catfish, or carp benefit from the continuous water filtration process, leading to a healthier aquatic environment.



Design and Development of Groundnut Pod Separator

Prasanth M, Sandhiya devi P

Groundnut harvesting involves **separating pods from plants**, a process traditionally done **manually** or using labor-intensive methods. This results in **high labor costs, time consumption, and inefficiency**. To address these challenges, a **mechanized groundnut pod separator** has been designed and developed to improve **efficiency, reduce labor dependency, and enhance productivity**.

The **groundnut pod separator** operates on the principle of **mechanical agitation and airflow separation**. It consists of a **feeding hopper, rotating drum, separating sieve, and blower mechanism**. The harvested groundnut plants are fed into the machine, where a **rotating drum** agitates and loosens the pods from the stems. The **separating sieve** filters out unwanted plant

residues, and a **blower system** helps remove dust and lightweight debris, ensuring **clean separation of groundnut pods**.

This machine is designed to be **portable, user-friendly, and cost-effective**, making it suitable for **small and medium-scale farmers**. The mechanized process significantly **reduces labor costs, improves efficiency, and increases the speed of separation** compared to manual methods. Additionally, it minimizes **pod damage and ensures a higher-quality yield**, contributing to **better market value and profitability** for farmers.

By integrating this **groundnut pod separator** into agricultural practices, farmers can benefit from **increased productivity, reduced harvesting time, and enhanced ease of operation**, making it a **valuable addition to modernized farming techniques**.



MODULAR LABOURLESS SOLUTION FOR NURSERY

Karthikeyan Y., Nishanthini S., Shibirasi M., Mounika K., Mr. Bragadeeswaran T

This project focuses on the **design and development of a manual seeder** for efficiently sowing **chilli, tomato, brinjal, and capsicum seeds** in nursery trays. The **seedling tray used for testing** consists of **221 cells per unit tray**, ensuring **uniform seed distribution**. The **primary components** of the manual seeder include a **PVC pipe, bolt, nut, and seedling tray**, making it a **cost-effective and user-friendly** tool for farmers and nursery operators.

The **manual seed sowing device** is designed to **simplify the process of planting seeds** by ensuring **precise depth placement, maintaining proper spacing, and covering the seeds with soil** for optimal germination. The seeder's mechanism works **simultaneously**, reducing manual effort and improving **accuracy and efficiency** compared to traditional sowing methods.

One of the key advantages of this seeder is its ability to **increase seed sowing speed, minimize seed wastage, and improve seedling uniformity**, which are crucial factors for **better plant growth and higher yields**. The device is **lightweight, easy to operate, and suitable for small and large-scale nurseries**, making it an **ideal solution for vegetable growers** looking to enhance their planting efficiency.

By implementing this **manual nursery seeder**, farmers can experience **reduced labor costs, increased productivity, and improved seedling establishment**, ultimately contributing to **better crop management and profitability** in the agricultural sector.



மானாவாரி மற்றும் தரிசு நிலங்களில் ஒருங்கிணைந்த பண்ணையம் ஆர். எம். சுப்பிரமணியன்

தற்போதைய நிலைமை

தமிழகத்தில் விவசாயம் செய்யப்படுத்துவரும் சுமார் 5.58 மில்லியன் ஹெக்டேர் நிலத்தில், பாதிக்கும் மேற்பட்ட பகுதி, அதாவது சுமார் 2.31 மில்லியன் ஹெக்டேர் நிலம், தரிசு நிலமாக அல்லது வானம் பார்த்த மானாவாரி நிலமாகவே உள்ளது.

விவசாயிகளின் சவால்கள்

குறைந்த அல்லது நீர் ஆதாரம் இல்லாத, வளம் குறைந்த மானாவாரி மற்றும் தரிசு நிலங்களில் பயிர் செய்வதன் மூலம், உழவர் பெருமக்கள் வருடம் முழுவதும் நிரந்தர வருவாய் பெற முடியாமல் மிகுந்த இன்னல்களுக்கு ஆளாகின்றனர்.

அரசின் முயற்சிகள்

அவர்களின் துயரை துடைக்க, நிரந்தர வருவாய் பெற்று தங்களுடைய வாழ்வாதாரத்தை உயர்த்த மத்திய மற்றும் மாநில அரசாங்கம் பல திட்டங்களை வகுத்து செயல்படுத்தி வருகின்றன. குறிப்பாக வரும் 12ஆம் ஐந்தாண்டு திட்டத்தில் ஒருங்கிணைந்த பண்ணையத் திட்டம் முக்கிய பங்கு வகிக்கிறது.

ஒருங்கிணைந்த பண்ணையம் என்றால் என்ன?

விவசாயத்தில் ஒரு பண்ணைத் தொழிலை மட்டும் மேற்கொள்ளாமல், ஒன்றோடு ஒன்று தொடர்புடைய இரண்டு அல்லது அதற்கு மேற்பட்ட பண்ணைத் தொழில்களை கூட்டாக மேற்கொள்ளுதலே ஒருங்கிணைந்த பண்ணையம் ஆகும்.

சிறப்பம்சங்கள்

ஒரு பண்ணைத் தொழிலின் கழிவுப் பொருள் மற்றொரு பண்ணைத் தொழிலுக்குப் பயன்படுகிறது. நிலப்பரப்பில் உள்ள நீர் வளத்தை சிறப்பாக பயன்படுத்த முடிகிறது. நிலம் சிறியது என்றாலும் அதிக லாபம் பெற முடிகிறது. வருடம் முழுவதும் உழவர்களுக்கு வருவாய் கிடைக்கிறது.

ஒருங்கிணைந்த பண்ணையத்தின் சில உதாரணங்கள்

1. மாடு + பால் + மண்ணு உரம்

மாடுகளின் பசு சாணம் மற்றும் கழிவுகளை இயற்கை உரமாக பண்ணையில் பயன்படுத்தலாம். பால் விற்பனை மூலம் தினசரி வருவாய் கிடைக்கும்.

2. மீன் + வாத்து + நெல்

மீன் குளத்தில் வாத்துகளை வளர்த்து, அவற்றின் மலத்தை மீன்களுக்கு உணவாக மாற்றலாம்.

குளத்தில் சேமிக்கப்படும் நீர் பாசனத்திற்கு பயன்படும்.

அதேநேரத்தில், நெல் பயிரும் உற்பத்தியாகும்.

3. ஆடு + தோட்டக்கலை பயிர்கள்

ஆடுகளுக்கு தோட்டத்தில் கிடைக்கும் புல்கள், கிளைகள் உணவாக பயன்படும்.

ஆட்டின் சாணம் தோட்டக்கலை பயிர்களுக்கு உரமாக பயன்படும்.

4. கோழி + காய்கறி + மீன்

கோழி பண்ணையில் கிடைக்கும் கழிவுகள், மீன்களுக்கு உணவாக பயன்படும். காய்கறிகள் விற்பனைக்கு வருவாய் தரும்.

ஒருங்கிணைந்த பண்ணையம் என்பது சிறிய நிலம் கொண்ட விவசாயிகளுக்கும் பெரும் பலன் தரும் முறையாகும்.

இது நில வளம், நீர் வளம் மற்றும் இயற்கை வளங்களை முழுமையாக பயன்படுத்தி, சுற்றுச்சூழல் நட்பு முறையில் விவசாயிகளுக்கு நிரந்தர வருவாய் மற்றும் வாழ்வாதாரம் வழங்குகிறது.



AGRICULTURE IS THE MOST
HEALTHFUL, MOST USEFUL AND MOST
NOBLE EMPLOYMENT OF MAN.

- George Washington



விழிகள் தேடும் விசித்திரம்

இயற்கை பார்க்கும் இடமெல்லாம் பூங்காவளம்!!!
அதை பார்க்கும் போதெல்லாம் பொங்கும் மனம்!!
எங்கும் படர்ந்த; பசுமை நிறைந்த; செடி கொடிகள் வேண்டும்!
ஏனென்றால், அதுவே; இயற்கையின் "தொப்புள் கொடி!!
மண்ணில் இருந்து விண்ணை நோக்கி வளரும்
"அழகிய "அடர்ந்த மரங்கள்! நம் உயிர் காக்கும்
"வாழ்வாதாரங்கள்"! விழி பார்க்கும் இடம் எங்கும் பசுமை!
என்றும் நம் வாழ்வில் புதுமை! இனிமை! செழிமை!
செயற்கை பொருட்களின் உபயோகிப்பது
அளவானால், இயற்கை நம் வாழ்வில் அமிர்தமாகும்!!
செயற்கை உபயோகத்தின் குறைவே!
இயற்கை உலகின் நிறைவே!!!
விழி தேடும் இடம் எல்லாம் "இயற்கை" வேண்டும்!
பார்க்கும் திசையெல்லாம் "இயற்கை" வேண்டும்!
(இயற்கை) என் விழி தேடும் விசித்திரமே!!!
வந்துவிடு இவ்வுலகில் விரைவாகவே!!!!

I.Santhiya

If conservation of natural resources goes wrong, nothing else will go right.

—M. S. Swaminathan



EDITORIAL BOARD

Dr. U. S. Ragupathy, Ph.D., Principal, NEC.

Dr. D. Ambika, HoD , Agri.

Mr. K. Pradeep Kumar.,AP, Agri.

Ms. J. Janani, 4th year, Agri.

Mr. M. Mounish, 3rd Year, Agri.

Ms. P. Kavidharshini, 2ndYear, Agri.



NANDHA ENGINEERING COLLEGE

(Autonomous)

Affiliated to Anna University, Chennai & Accredited by NAAC A+ Grade
Perundurai - Erode Main Road, Erode - 638 052, Tamilnadu.