

# ESSENCE OF INNOVATION 2014

## CONTENTS:

- ◆ SCIENCE BEHIND TRADITION
- ◆ MEET AN ENTREPRENEUR
- ◆ TECHNICAL INNOVATIONS
- ◆ INSPIRATIONAL SESSION
- ◆ REEL VS REAL
- ◆ UPDATE YOURSELF
- ◆ READERS COLUMN



## EXPLORING FOOD

### For Farming, For Food, For our Future

The B.Tech (Food Process Engineering) students are always encouraged to pioneer new initiatives to nurture creativity, develop leadership and share technical knowledge among the building engineers.

This began with a technical symposium titled “**Food Xplore**” in 2000, which served as a platform for the students nationwide to stage their innovations. As the country is in threshold of leaping into major breakthroughs in the area of post-harvest technology and food processing, we believe in our efforts to continue the food exploration.

**FOOD XPLORE** paves the way for creating young innovations that lead to future food engineers, entrepreneurs, scientists. *This symposium is a tributary where all food colleges meet and new innovations and ideas are given life.*

Many competitions like drawing for school students, oral paper presentations,

poster presentations, quiz are conducted and new ideas are replenished. This initiative is expected to enrich the sustainable food systems for food security and nutrition among the people of our nation. This year too we celebrated food explore grandly on Sep 26.



## SCIENCE BEHIND TRADITIONAL FOODS

### Pazhya soru:

Pazhya soru, a boon for the poor letting them to work for hours together without feeling hungry in scorching heat of the sun with full zest and vigour.



It increases one's resistance to various diseases and also contain **plethora of nutrients** which keeps the limbs smooth and strong. It was found that **lactic acid bacteria** isolated from pazhaya soru has potential of removing anti-nutritional factors from food. It is a **good source of Vitamin B12** preventing anaemia, fatigue and tiredness. **100 g of cooked rice** has **3.4 mg of iron**, but the fermented rice which has been kept for **12 hrs** has the iron content of **73.91 mg**.

### Here is a simple recipe...

Soak the cooked rice in immersing level of water. Drain little water after 12 hours, then add buttermilk / curd. Smash it well with a ladle. Add little more water to bring it to porridge consistency. Add required salt, finely chopped onion and green chillies, mix well. Pour into mud pots and allow it to rest for a while. Serve it. It is taken with onion or shallots which are rich in sulphur-containing anti-bacterial compounds.

### Do you know everything about ghee ???

**Ghee is the only source of animal fat, predominantly vegetarian diet of most Indians.**

Milk fat contains various anti carcinogens, such as Conjugated **Linoleic Acid (CLA)**, **butyric acid**, **sphingomycelein**, ether lipids and vitamins, which is most effective in preventing cancers.

Ghee is observed to improve the growth rate and digestibility. Ghee was found to have **hypcholesterolemic effect** upon consumption and was even used in Ayurvedic treatments for heart diseases.



### Porridge the royal food:

Britain's longest lived man, **David Henderson** from Montrose, Scotland who died in 1998 at 109, attributed his age and good health to a daily bowl of porridge. This is because the lipids present in oats contain a good balance of essential fatty acids which have been linked to **longevity and general good health**.



**Porridge originated from Scotland.**

**# 49 % of UK people eat porridge everyday.**

### Seasons

**SUMMER**  
Cold, sweet, soft foods cool the body. Acid and bitter food and heat producing food should be avoided otherwise it increase acidity and heat.

**SPRING**  
As digestive function is reduced, food with high acidic content and sweet foods must be reduced as it can cause stomach ulcers.

**WINTER**  
Prefer heavier foods than light foods as digestive system is more active.

**AUTUMN**  
Eat dark green, fresh nuts, orange vegetables, Soups to assist digestion

(Source <https://mysterieexplored.wordpress.com/.../indian-customs-and-scientific>).

# TECHNICAL INNOVATION

## Food is not only meant for eating but also to inspire:

Researchers at Stanford University have taken inspiration from the pomegranate to design supercharged anode battery. Working in collaboration with the SLAC National Accelerator Laboratory, **the team used the pomegranate's unique seed design to make a battery that can store 10 times more charge than a standard rechargeable lithium-ion battery.**



The pomegranate project could lead to smaller and lighter silicon anode batteries that could power cell phones, tablets and other devices.

**The silicon anodes could store 10 times more power than traditional graphite anodes, operating at 97% capacity even after being charged and used 1,000 times. Clustered like pomegranate seeds, the silicon anodes are light and powerful, encased in carbon shells that conduct electricity.**

## How it happens:

The silicon anodes, arranged like **pomegranate seeds**, are smaller than their carbon outer casing, which enables more **leeway when cycling** and prolongs the life of the battery. As the silicon is charged, it expands within its carbon shell, which keeps the anode safe and intact and acts as a perfect path for electrical currents. The scientists are currently working on perfecting the process, and sourcing lower priced silicon nanoparticles to make the battery affordable for the consumer market. ( Source:<https://www6.slac.stanford.edu/.../2014-02-16-pomegranate-inspired-batt..>)

## Papaya – a mosquito repellent:

**Dr.Venkatraman** and **Dr.NehaKulkarni** (Gujarat scientists) prepared an extract from papaya leaves and tested it at various stages of mosquito breeding. They pursued the efficacies of the extract for months.

They observed that **“the mortality rate of mosquitoes was 86 % !”**

## Procedure:

- ◆ Collect some papaya leaves.
- ◆ Crush and prepare an extract.
- ◆ Dilute it in water.
- ◆ Study its effect on mosquitoes and observe the mortality rate.



***This invention was given third price by the Intel International Science and Engineering Fair (IISEF) in America this May among 1500 inventions.***

## Edible films -Paint your food:

When red tomatoes are too ordinary....Go Gold!!!!

**“It is safe because, spray does contain food dyes and ethanol.”**

It works like a basic spray can, making it practically **foolproof**, even if you're not a professional chef. **"Just spray it on whatever you wish to decorate, give it some time to dry, and there you go!"**



## Even cover isn't a waste:

For some types of produce, edible coatings can eliminate the need for expensive modified-atmosphere packaging. A cellulosic film-former, such as **CMC** or **hydroxypropyl methylcellulose (HPMC)** can be used as a moisture barrier for cut vegetables that tend to turn white as they dry out.



**Ge-calorie counting technology:  
Scan your plates to know  
calories instantly:**

A mock-up of one conceptual design for a future calorie counter device.

A new prototype machine tells you the calories of your food on your plate **without the complicated and tedious chemical analysis!**

GE Global research scientists are developing sensor technology to make estimation of dietary calories in food as simple as the touch of a button.



The device uses advanced sensor technology to estimate the fat content, water content and weight of the food in order to automatically calculate dietary calories.

Right now GE has developed only a prototype and they hope for further development of this technology that will result in a pushbutton device that will provide calories content of your meal in an instant.

**Turmeric ink marker pen:**

A pair of prodigious scientists from the SG Dholakiya memorial high school in Rajkot (Gujarat) has produced marker pen ink with chilli (red ink), turmeric (yellow), carrot (saffron) and even rose petals (pink).



**Procedure:**

- ◆ Collect different kinds of coloured vegetables and crush them separately.
- ◆ Let this solution to boil at 100 degrees Celsius for nearly 20 minutes.
- ◆ Keep it for self-cooling for nearly an hour,
- ◆ The hue is prepared.
- ◆ Add kerosene in different proportions to the dye.
- ◆ Pour 0.5cm diameter cotton cording into it.
- ◆ After an hour, you can use it as marker pen.

*This invention won \$1,000 award at the fair by ISEF.*

**DO YOU ALL THINK ALL THE CANDIES ARE VEGETARIAN ???**

**WHAT'S THE COATING ON CANDIES MADE OF?**

Have anyone of us ever thought what would be the coating of the colourful candies we consume????

(Source:www.geglobalresearch.com/Edison's Desk)

Answer is here !

Confectioner's glaze, a common coating on candies and pills, is made from the bodily excretions of an **Asian beetle**. Confectioner's glaze, also called pharmaceutical glaze or pure food glaze, is a common ingredient in candies and pills. It's the same ingredient as **shellac**, the **chemical sold in hardware stores** that's used for **ceiling and varnishing** wood floors. It is also a common ingredient in children's medicines and even some children's frozen foods.

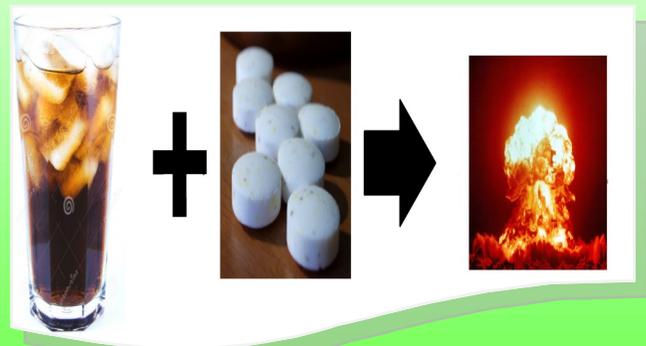
Shellac is actually a chemical secreted by **female lac bugs (Lacciferlacca)**, a type of **"scale insect."** They create shellac in order to form sheltering tunnels as they travel along the outside of trees. It is extracted for industrial use by scraping bark, bugs and tunnels of trees in Asian forests and into canvas tubes. The tubes are then heated over a flame until the shellac melts and seeps out of the canvas, after which it is dried into flakes for sale.

Before use in food or as varnish, the shellac must be re-dissolved in denatured alcohol.

The **FDA** classifies shellac as **GRAS, (Generally Recognize As Safe)**. Instead, it should be classified as **"beetle juice!!!"**

**Please don't try this:  
What happens if you drink  
softdrink and take mouth  
refreshner immediately ?**

The bloating and vomiting herinate the oesophagus and leads to a dangerous medical condition that could result in death. If you take carbonated drink followed by a mouth refreshner (a brand of mint), it cannot assimilate in the human body and rapidly generate carbon-di-oxide fast enough to keep the stomach from severe bloating. Minimally, the result would be a vomiting of the contents of the stomach and can even cause death.



# MEET AN ENTREPRENEUR

## DHAANIYAM..,

Shenu riaz tracks the new found love for cookies made of millets. They are healthy, has no preservatives, particularly the taste tracks the love for cookies made of millets and minor millets.

We are proud to innovate **Mrs.Poomaalai of Coronet Food**, a manufacturer who retails under the Dhaaniyam brand. Mrs.Poomalai has been making millet-based foods for the past 14 years, but says they have become popular only in the recent two to three years. Her company, which has factories in Kalapatti and Vadavalli, is also part of TNAU's ABI. Coronet Foods makes 500 kg of millet-base products every day.

Wow, she started with a pleasing smile .., yeah Mrs.Poomalai 45, who has done a **DIPLOMA IN FOOD AND NUTRITION**, says she was drawn to millets as she hailed from a family of farmers in the Nilgiris. She started her business with commercial products like noodles. In order to enrich the product she added soya to noodles, and it became the **FIRST SOYA NOODLES IN THE WORLD**.

*For this product Sakthi soya and American soya joined together and awarded her. This give her more promos, it also motivated her to introduce more nutritious healthy food products.*

On those days, farming people used to work a lot, in order to balance their energy, they used to take millets. Now-a-days, millets are considered to be an unheard one, the main reason for this preservation techniques. She got an idea to develop her products using millets like flakes (bhajra, ragi, cholam), minor millet cookies, puttu mix. Flakes are mostly welcomed by children, as it is trending now-a-days. We are also creating awareness among the farming community to harvest millets in their farms. If these millets come to our day to day life surely deficiency for food will be reduced.

As it is a competitive world, people are very busy in doing their routine works. In order to reduce their work load we are giving our **READY TO EAT** products

**In our product** we are using **defatted oil, less sugar**, we are not changing it's natural taste. It is **available at all the organic shops**, in addition to that we are conducting camps and planning to introduce many millet restaurants. If anyone is interested we are ready to tie up with them. **We are also planning to make pizza in kambu, wheat..**, Apart from business a whole hearted satisfaction in giving nutri-

tious products. We are taking millets from the organic certified farms (chemical free farms).

They taste like nothing you've eaten before. They look like regular cookies, but there's the crunch of goodness, the flavor of the food your forefathers ate and a feeling of lightness. Welcome to the world of millet cookies.

We are also **ready to accept new ideas** in making varieties of millet products. We are giving **trainings for the upcoming entrepreneurs**.

**CONTACT: +919965148934**



# INSPIRATIONAL SESSION



He sold the products door to door at a cost of one rupee each, in the year 1995 and now the turn over of his company is Rs.700 crores as per the year 2011-2014.

His social thinking gave him such an awesome idea, and his practical experience in working as a sales executive in Godrej company, paved the way for his success.

Such an inspirational person is none other than the Chairman and Managing Director of “**AACHI GROUP**” **Mr.A.D.Padmasingh Issac** born and brought up in Tirunelveli District, Tamilnadu, from a middle class family. He employs differently abled people and being a hope and backbone for them.

In the past, for preparing sambhar, the chilli has to be powdered using hands which consumed more time and manual work. The sad thing is that **“The colour retained, even after grinding and washing the hands ” because of heavy work !**

An ordinary man, on seeing his mother’s sufferings while preparing a meal, got fed up and questioned himself, **“Why should women waste so much of time in kitchen, for preparing a meal?”**

An idea struck his mind to bring a solution for this by preparing powdered spices using technology which would save time and labour. He didn’t have sufficient money to start his business, so he collected Rs.100 from each one of his relatives and well-wishers and started a business with just Rs.30,000 as a capital.

This Passage was based on speech delivered by Mr.A.D.Padma Singh in the scoftech competition, a national level Symposium conducted in IICPT. Thanjavur on 7-2-2013.

**“Food industry is such a strong ladder that it can lift even an ant into an giant”**



So, we the future pillars of the food industry should get inspired by such personalities and **“NURTURE OUR FUTURE”**.



*Most of the time, I see my maternal grandmother taking crystal salt or lemon and revolve around me saying “Drishti”, evil eye. She always does this when I visit her.*



*“Drishti” is an evil eye on whom others feels jealous. Such a person would be ruined or would fell sick. As a cure and remedy to this evil eye, we take drishti by revolving salt and lemon around the person. It is followed even from my childhood.*

*Salt is the first antibiotic. When salt and acidic substances are combined they would lower and balance the magnetic field. Lemon and salt having a tremendous role, we revolve salt and lemon around the person. This is done to kill all the bacteria by forming an “aura layer” of antibiotics around the person and balance the magnetic field too. This would make the person feel better.*

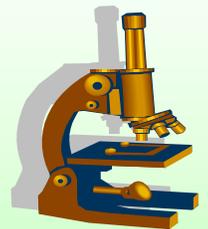


**Why should Tulsi not be chewed with teeth?**



*“It is a popular belief that Tulsi is the wife of Lord Vishnu; therefore, chewing it will be a mark of disrespect.”*

*“Tulsi leaves has the maximum of mercury. If raw mercury is applied to teeth, they fall immediately. That’s why, Tulsi leaves are not chewed but swallowed.”*



**HOME REMEDIES TO GET RID OF LIZARDS:**

*To keep them away from your kitchen, keep a few empty egg shells on your cooking table. Cut onions or garlic into halves, place them in high places like on top of a tube light or bulb where the lizards can smell it. The smell is an irritant. Keep some peacock feathers in the kitchen, so that lizards will never peep your kitchen again.*



*( Source:www.speakingtree.in/spiritual-slideshow/seekers/science.../151880)*

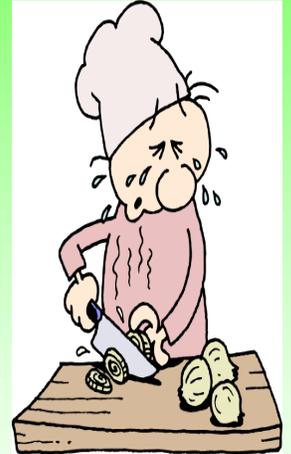


## UPDATE YOURSELF

### Do you know ?

#### WHY ONIONS MAKE YOUR EYES WATER?

Onions, along with many other plants in the *Allium* species, absorb sulphur from the soil. When onions are chopped, it ends up breaking the cells within the onion, which releases certain enzymes. These enzymes then react with the sulphur, creating **amino acid sulfoxides**. These in turn, create the highly unstable *syn-propanethial-s-oxide*, which is a combination of sulphuric acid, sulphur dioxide and hydrogen sulfide. When this substance, in the gaseous state, comes in contact with the moisture in your eyes, it triggers a burning sensation via the ciliary nerve. So the lachrymal glands of eyes, try to flush the irritant out of your eyes with tears.



## READERS COLUMN

This module “**ESSEN RIVESTA**” is a complete magazine that gives the current updates of the food industry. With lot of efforts it has been brought into its full shape which consists of information like food news, facts, emerging technologies and heights of entrepreneurship in the food industry.

We have taken an opportunity to present this small magazine entitled as “**ESSEN RIVESTA**” to the people as they can enhance their knowledge about food in a most concise manner. We assure that this exclusive magazine for food will be out of box kind.

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**Tamil Nadu Agricultural  
University**

*transforming the lives of farmers*



AGRICULTURAL ENGINEERING COLLEGE AND RESEARCH INSTITUTE  
TNAU, Coimbatore, Tamil Nadu 641003.  
PH:9688214884,9789743772. mail– [essenrivesta@gmail.com](mailto:essenrivesta@gmail.com)