BIOLIFE

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ACI Animal Health Introduces Enermax

Bangladesh's First Heat Stress Reliever for Cattle

Heat stress is a very common phenomenon in dairy cattle especially in high yielding breed and cross-breed animals in Bangladesh. High yielding cross-breed animals suffer from heat stress as they do not match with the temperature in summer season. Besides, our housing management is not that efficient to maintain a suitable temperature for the animals in dairy farms. As a result, productivity is not achieved to the optimum level and it demotivates farmers for rearing high yielding cross-breed cattle. To check heat stress in dairy animals no specific products are available in Bangladesh for large animals. ACI Animal Health introduces 'Enermax' a specially designed product for cattle for the very first time in Bangladesh to alleviate heat stress and ensure maximum output for farmers of our country.

'Enermax' is a combination of Betaine Hydrochloride and Beta-D-Glucan with rumen protected palm fat powder. Betaine Hydrochloride maintains osmo regulation of cells, and thus maintains water balance and relieves stress effectively. Besides, Beta-D-Glucan ensures maximum immunity and prevents the risk of diseases associated with stresses. The protected palm fat is made of by-pass technology which ensures maximum absorption of the active ingredients and supplies instant energy to animals suffering from heat stress associated anorexia.

This innovation from ACI can increase the production of meat and milk.This will also encourage farmers to rear cross-breed animals in tropical climate of our country. We wish this innovation of ACI Animal Health will play a vital role on the development of livestock sector in Bangladesh.

Link of the video: https://goo.gl/rNa1FV

Dr. F H Ansarey
Managing Director & CEO
ACI Agribusiness

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Designing Future Rice Varieties at ASRBC for HYV with high Nutrients in Bangladesh

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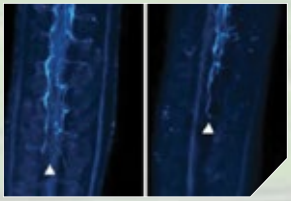


New Model for Communication in Plant Cells

A study led by the University of Maryland explains how plants communicate within cells using a protein that closely resembles an animal protein that has a role in communication between nerve cells.

Floriculture: A Taka 1200 Crore Business in Bangladesh

In the last two decades, the nursery and flower business has gained a huge market of taka 10 billion plus with potentials to increase further. The present demand is mostly from middle-income groups as well as special programs of corporate and government agencies. The present increase in production has also reduced import cost by 41%, compared to 2013 with 2016. Thus, flower cultivation and use have become a potential agribusiness with economic benefits to both processors and producers.

Bangladesh has the advantage of having fertile land and favorable environment for the cultivation of a good number of ornamental species. According to the Bangladesh Flower Society, the economically important flower species of the country are tuberose, types of roses, gladiolus, marigold, gerbera, daisy and some orchids.

About 45 million saplings are being sold annually by the country's nurseries. Out of the total, almost 20% alone is provided by different varieties of flowers and ornamental plants. This amount was less t According to a report of the Bangladesh Flower Society, the sales of flower were $31 million in 2009-10 which rose to around $100 million46 districts by 2015-16. More than 20,000 people from about are involved in flower cultivation, post-harvest processing, and marketing to retailing. Flowers are grown on nearly of land in 13 regions covering /districts of the country of which the Jashore district alone including Godkhali Union of the district is the pioneer and prominent one with more than 2600 acres or 48% of total area. Documented information indicates that one bigha (33 decimal) of rose garden can alone give Tk 100-150 thousand per year and a rose garden may live for 10-15 years. On the other hand, any flower garden is able to provide Tk 40-45 thousand per year from just one bigha of land. This makes flower cultivation economically profitable. Under the project Agricultural Value Chains (AVC) organized by the USAID, both farmers and traders have been trained in farm practices, new technologies, packaging and transporting.

This Sector has improved a lot in the last few years. But now there is a need for appropriate business plan linking the markets and the farmers covering an effective supply chain system. There is also a special need for providing high quality-seeds and seedlings at a reasonable price with other inputs to help both the farmers and the country economically. The assistance of Prof. AFM Jamal Uddin, SAU and Aqief Afzal, Research Assistant, ASRBC, ACI Limited for this note is highly acknowledged.

Prof. Lutfur Rahman

Fig A-C: Field of Gerbera Flowers and Post-harvest management markets

Designing Future Rice Varieties at ASRBC for HYV with high Nutrients in Bangladesh

Today rice, on average of three eco-types covers 281,444,000 acres (2013-2016) or 73.77% of the gross cropped areas of 38148,000 acres (2015-16) of Bangladesh. It uses 73.48% of irrigation water of total 18405,000 acres and also uses 71.99% or close to that of N fertilizer of 36,82,670 tm. in 2005-6. Such high percentages of input use by rice with an average yield of only 1178kg/acre or 2910kg/ha are certainly not the good return on investment (RoI) in rice. Again the farmers and the policymakers cannot afford reducing rice acreage giving space for wheat or maize for a mixed food system. So, there is a need for improvement of rice varieties with a target expectation of rice yield close to 10 tons/hac. In reaching that target a combination of Conventional-Molecular-Participatory breeding system is necessary in a team of breeders to coordinate and not in isolation. The trait specific breeding will help us to get desirable types faster than the yield alone.

It is necessary to breakdown both photo and thermo sensitivity of the rice varieties/lines. This can be done easily by identifying gene/genes using our rice genetic resources and creating new diversity. Also, we need to determine the presence of gene/genes using RGA followed by molecular and conventional selection. Once identified, testing of the materials for G-E interactions under varied agro-ecological conditions is important. These materials may then be available for sharing on MTA, or direct or royalty payment system whichever is acceptable to the breeders/ organizations like in the CGIAR System.

In addition to the photo and thermo sensitivity major emphasis should be on plant ideotype, strong erect leaves with delayed senescence, closely netted veins on the leaves, high root biomass with longer root system, plants having fast and uniform tillering ability with longer panicles having neatly arranged grains close to 250. The grain maturity time should be 60+ days. Recently, there have been attempts to increase nutrients of different types including Zinc, Iron, Vitamins, etc. inclusion of those traits should be planned for the variety with higher yields at farmer's level for faster adoption. Thus, the breeder has to tailor his/her plants as per need of the present and future of rice. We usually do not plan considering both genetics of traits and their combination effects on ultimate yield against environment and diseases. Development of varieties for T.Aman should be encouraged than Boro which can help reduce water use. ASRBC rice programs (2012-2015) before start of the ACI-IRRI-PPP project have successfully developed eight lines through TILLING that produced more than 10tons yield/ha with one produced 11.20tons in Boro season of 2015-16 and was close to that of BR-29, but a week earlier than the other while 4 lines were much better than BR-28 producing more than 7tons/ha compared to BR28 (6.85/ha tons).

(Source: R&D Achievements of ASRBC June 30,2016 A.Islam et al. Page 17.)

Name/designation	Plant height	Maturity	Yield(t/ha)
BRRIDhan-28	106.2 Cm.	141 days	6.85
BRRIDhan-29	93.0	155	12.07
BD28-R1.8-29-16-87-163	95.0	150	11.20
BD29-R1.6-26-85-84-191	92.8	150	11.02
BD29-R-1.6-24-64-48-156	94.0	149	11.08
BD28-S-1.4-06-43-28-36	95.4	151	11.02

ACI Seed Product Portfolio Orientation

In April 2018, ACI Seed arranged two highly intensive training (HIT) program for the field force to orient them with overall portfolio management of the business. The training included topics such as market and customer goals (strategic focus), opportunities and priorities (market momentum), build and deliver (customer success), market and sell (credibility), present and demo (product performance evaluation) etc. The training was conducted in two locations on different days: on 9 April 2018 at BRAC Learning Centre, Bogra for South & North Region Field Force and on 15 April 2018 at BRAC Learning Centre, Sreemangal for Dhaka & East Region Field Force. Lectures, brainstorming and post-training evaluation conducted by portfolio team, and finally motivation and awareness training conducted by training division were main parts of the daylong training programs. Product Manager (Vegetables) Mr. Abdullah Al Masud delivered a presentation on product features, benefit and territory wise opportunity of Kharif and Rabi Vegetables Seed. Portfolio Manager (Field Crop) Mr. Golam Mostafa presented Potato and Maize Seed features and benefit as well as territory wise opportunity for these products. Besides, Product Executive (Field Crop) Mr. Ashraf Hasan have talked about Crops Seed and Rice Seed features as well as benefits. Sales Manager Mr. A K M Shahinur Rahman discussed the training topic in depth. Head of Business of ACI Seed Mr. Sudhir Chandra Nath attended the program at Sreemangal and shared his experiences in the seed industry to encourage the participants.

Fertilizer Field Force Refreshers Training

ACI Fertilizer Field Force Refresher Training Programs were organized on 7-8 April in Bogra and 12-13 April in Jashore. The main part of the program was a basic training session for field force to create vibrant drive among them for an effective impact on field sells. The training program was conducted by Training Department personnel where Business Director Mr. Bashir Ahmed, Asst. Marketing Manager Mr. Yusuf Alam, Asst. Product Manager Mr. Asadur Rahman, respective Zonal Sales Managers, Area Managers and Territory Officers also shared their thoughts and ideas on specific product knowledge, new product expansion, and new market development. Moreover, discussion on selling skill, promotional techniques, communication approach, and strong engagement with DAE also took place. The training program really inspired the sales force in their area of work and created a positive vibe. Field force members also acknowledged the need for this kind of regular training session to boost up their skills and confidence.

ACI Fertilizer's Meet the Farmers Program

ACI Fertilizer organized day long "Meet the Farmers Program" in Naogaon and Natore on 22 and 23 April 2018 respectively. The main objective of the program was to get connected with farmers strongly, and talk about their expectations and perception about ACI Fertilizer. Business Director Mr. Bashir Ahmed, Regional Sales Manager Mr. Rejaul Islam, respective Field Officer and SAO attended the program. In Naogaon, there were 200 farmers who participated in the program. ACI Fertilizer personnel talked about various topics for instance: usage of fertilizer in soil fertility, proper application of fertilizer to maximize yield, key ingredients for plant growth, etc. The importance and application of NEB, Organic Fertilizer, Compound Fertilizer, Promoter and Bioferti on eggplant, water caltrop, and chili were also discussed in the session. The farmers spontaneously discussed their problems,

opportunities in cultivation system, positive result of using ACI products, etc. In Natore, 45 guava harvesters directly participated in Meet the Farmers Program. The feedback from invited farmers was very positive as well as fruitful.

Moreover, another training program on Burmese grape's (lotkon) niche market was also conducted in Narsingdi on 21 April 2018. Burmese grape is mostly harvested in Shibpur and Belabo Upazilla of Narsingdi. Mr. Yusuf Alam, Asst. Marketing Manager; Mr. Alauddin, Area Manager and Territory Officer were present in this training program. They talked about the importance and proper application of Bioferti, Solubor Boron, Quick Potash and Vitamix for harvesting Burmese grape in perfect shape, size, color, and taste.

Field Days on Ratno & NEB

In April 2018, Field Day programs on Ratno in Hobigonj, Kushtia, Khulna, Faridpur and Rajbari were arranged by ACI Fertilizer. The aim of these Field Days was to show the practical result of applying Ratno NPKS Fertilizer in Rice and Onion. The result was fruitfully positive because the expected yield was achieved from the demonstration plot. There was a Field Day on Ratno Fertilizer targeting Rice at Madhobpur, Habiganj dated on 29 April 2018 in the presence of Agriculture Officer, local Chairman, Stockiest, Retailers and Model Farmers. The yield variation was 27% over control plot.

Moreover, ACI Fertilizer conducted Field Day on NEB targeting maize at Kshobpur, Jashore and Kushtia. After using NEB in maize, the costing of Urea got decreased. Now it is being applied once after mixing with NEB, whereas they had to apply urea twice before. Again, after applying NEB, maize plant got stronger, the number of maize grain increased and the plants became greener.

Power Tiller Mega Service Campaign 2018

In April 2018, ACI Motors arranged Power Tiller Mega Service Campaign 2018 at 8 different locations of the country. From 10 to 20 April 2018, the Mega Service Campaign serviced 250 Power Tillers at different locations of Mymensingh, Rangpur, Naogaon, Chuadanga, Jashore, and Cox's Bazar. Around 600 people participated in these Service Campaign programs. The key highlights of the event are Customer, farmer and local mechanics gathering,

pre-seasonal Power Tiller servicing, and Open discussion, games, gift distribution etc. The Power Tiller Mega Service Campaign 2018 is the only initiative in Bangladesh's Power Tiller industry to provide extensive after sales service ensuring customer satisfaction around the country.

Pohela Boishakh Celebration by ACI Motors

With the participation of more than 4,000 people, ACI Motors celebrated the Bengali New Year 1425, also known as the festival of Pohela Boisakh (Bengali: পহেলা বৈশাখ). These celebration events took place in 26 zones country-wide. Friendly stakeholder gatherings were the main attractions of the celebration. Games, gifts, refreshments and lively discussions were part of the event along with product display. Participants made spot queries about different products and services of ACI Motors. Subsequently, 93 spot booking for Tractors were made by customers during the celebration.

Aurora Shrimp from ACI Agrolink

ACI Agrolink is going to introduce Aurora Shrimp to ensure the highest quality through timely processing with the help of its state-of-the-art technology. The shrimp processing plant for Aurora is at the heart of the shrimp farming hub of the country allowing Aurora to process shrimp within an hour of harvest; ensuring the best quality black tiger shrimp in the world. With professional industry expertise, international quality control facilities and best hands-on shrimp processing, Aurora is setting a benchmark in terms of quality and food safety. The state of the art factory is designed to deliver the highest level of quality standard and meet the specific needs of the customers. The factory is a 43,000 sqft building with the production capacity of 35 ton per day. ACI Agrolink is committed to premium quality, unwavering commitment, and continuous innovation.

New Model for Communication in Plant Cells

A study led by the University of Maryland explains how plants communicate within cells using a protein that closely resembles an animal protein that has a role in communication between nerve cells. While plants lack a true nervous system, previous studies have shown that plants need these proteins, called glutamate receptor-like proteins (GLRs), to do important things such as mate, grow, and defend themselves against diseases and pests. In the study, researchers working with pollen cells from Arabidopsis thaliana found that these GLR proteins form the basis of a complex communication network inside individual plant cells.

The similarities between the animal nerve proteins (glutamate receptors) and the GLR plant proteins suggest that the two proteins date back to a common ancestor—a single-celled organism that gave rise to both animals and plants. Research findings suggest that GLRs rely on another group of proteins, called "cornichon" proteins, to transport GLRs to different locations in plant cells and to regulate activity of the protein within each cell. The study found that with the help of cornichon proteins, GLRs act as valves that carefully manage the concentration of calcium ions—a vital aspect of many cell communication pathways—within various structures inside the cell.

(Source: Agriculture and Food News, ScienceDaily. www.sciencedaily.com)

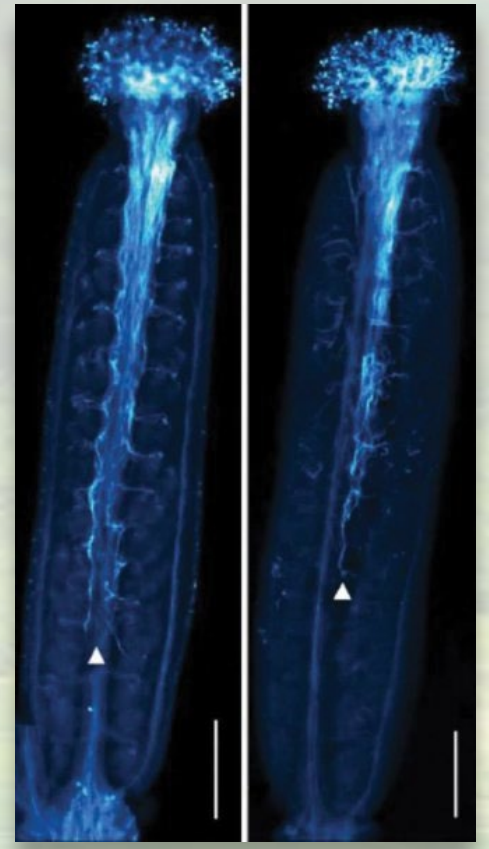


Photo Credit: José Feijó/University of Maryland

At left, normal Arabidopsis thaliana plants reproduce when pollen tubes (thin blue filaments) grow downward toward the ovules to produce seeds. At right, in a plant with a mutated glutamate receptor-like protein gene, this process happens much more slowly. Arrows in both images mark the advance of the pollen tubes at exactly the same time after pollination.

Research Unlocks Rice Gene Diversity for Food Security

A new study opens the possibility of accelerating rice breeding to help achieve food security for some of the world's most vulnerable rice farmers. A collaboration among the International Rice Research Institute (IRRI), the Institute of Crop Sciences of the Chinese Academy of Agricultural Sciences (CAAS), BGI-Shenzhen, and 13 other partner institutions, the research will enable scientists and breeders to discover new gene variants and characterize known genes for important traits, such as disease resistance and tolerance to floods, drought, and salty water. Additionally, molecular breeders could use the genetic markers to select rice plants that are more likely to carry a desired trait before they are planted in the field.

Results of the research revealed that, among the 3,000 rice genomes, there are significant variations in gene content and immense sequence variation. Researchers identified more than 10,000 new rice genes and over 29 million simple variations throughout the genome. Additionally, within the two major rice variety groups, the analysis revealed the existence of previously unreported populations that are unique to specific geographic origins. Other evidence revealed that Asian rice was domesticated multiple times thousands of years ago.

"This information leads to faster and more accurate development of varieties suited to various agricultural environments, especially for unfavorable rice-growing areas where the poorest and most vulnerable farmers reside," says Dr. Jacqueline Hughes, IRRI's Deputy Director General for Research. Dr. Kenneth McNally, IRRI senior scientist, said that this is the largest set of genomic variants discovered for a crop species that is freely and publicly available for plant breeders and scientists across the world. It already serves as material for training a new generation of plant biologists.

(Source: Crop Biotech Update, International Service for Acquisition of Agri-Biotech Applications. www.isaaa.org)

Plant Breeders Balance Shared Innovation, Revenue

Public-sector plant breeders (for example, at public universities) have developed crops for better productivity. As a result, more food is available to feed a growing population. This research and innovation requires funding. But funding -- and revenue from the crops developed -- is increasingly hard to obtain. In response, a group of plant breeders met in 2016 to discuss best practices. Julie Dawson, an assistant professor at the University of Wisconsin-Madison, is lead author of a recent paper summarizing their recommendations.

Intellectual property rights can protect crop varieties. And licensing can provide revenue to support further developments. But certain types of intellectual property rights can restrict plant breeders from sharing plant materials. That can limit innovation across the board. Finding a balance between these needs is tricky. It's also important: "Crop breeding is critical for the future of agriculture," says Dawson.

"Plant breeding programs benefit farmers everywhere. They also benefit anyone who eats."
The group has three recommendations. They suggest developing best practices for revenue sharing. They advocate for increased funding for public programs. They also suggest establishing professional standards for sharing plant breeding materials. Historically, many crop varieties were released to the public with almost no restrictions. "But budgets are getting tighter," says Dawson. "Grant funding is also becoming more competitive. Public sector plant breeders need to seek other sources of revenue."

(Source: Agriculture and Food News, ScienceDaily. www.sciencedaily.com)

Photo Credit: Micaela Colley / Organic Seed Alliance

Carrot Breeder Philipp Simon (USDA-ARS, Madison WI) and graduate student Charlene Grahn explain their selection for stronger and more vigorous tops to improve carrot competition with weeds and ease of mechanical harvest. This complex trait is important for both conventional and organic production.

Plants Can Cut Indoor Air Pollution

People in industrialized countries spend more than 80% of their lives indoors, increasingly in air-tight buildings. These structures require less energy for heating, ventilating, and air conditioning, but can be hazardous to human health if particulate matter and potentially toxic gases, including carbon monoxide, ozone, and volatile organic compounds, from sources such as furniture, paints, carpets, and office equipment accumulate. Plants absorb toxins and can improve indoor air quality, but surprisingly little is known about what plants are best for the job and how we can make plants perform better indoor. In a Review published 19 April 2018 in Trends in Plant Science, Frederico Brilli, a plant physiologist at the National Research Council of Italy -- Institute for Sustainable Plant Protection, and colleagues conclude that a better knowledge of plant physiology, along with integration of smart-sensor-controlled air cleaning technologies, could improve indoor air quality in a cost-effective and sustainable way.

Plants improve air quality through several mechanisms: they absorb carbon dioxide and release oxygen through photosynthesis, they increase humidity by transpiring water vapor through microscopic leaf pores, and they can passively absorb pollutants on the external surfaces of leaves and on the plant root-soil system. But plants are usually selected for indoor use not for their air-purifying abilities but for their appearance and ability to survive while requiring little maintenance. "For most of us plants are just a decorative element, something aesthetic, but they are also something else" says Brilli. According to Brilli, such studies could show how to "optimize the use of plants indoors, in terms of how many plants per square meter we need to reduce air pollution to a certain level."

Research is also needed to understand plant microbiomes: the populations of microorganisms (bacteria and fungi) that live with plants both in the soil and on leaf surfaces. This microbiome participates in the removal of airborne pollutants, but the contribution of different microbial species to removing pollutants is currently unknown.

Photo Credit: Photographee.eu / Fotolia

Plants absorb toxins and can improve indoor air quality.

(Source: Agriculture and Food News, ScienceDaily. www.sciencedaily.com)

Cotton Research Goes to Space

Christopher Saski, a Clemson University associate professor of plant and environmental sciences, together with his transdisciplinary team of investigators, is sending his research on the cotton genome into outer space after being selected as a winner in the Cotton Sustainability Challenge. The Cotton Sustainability Challenge, run by the Center for the Advancement of Science in Space (CASIS) and sponsored by Target Corp., provided researchers and innovators the opportunity to propose solutions to improve crop production on Earth by sending their concepts to the International Space Station (ISS) U.S. National Laboratory.

Saski's project proposes to examine gene expression, DNA methylation patterns, and genome sequences of embryogenic callus material that respond differently to regeneration in tissue culture during the process of regeneration under micro- and normal gravity environments. This project could help unlock the phenomenon of genetic recalcitrance (resistance) to regeneration, advancing fundamental biological knowledge and can have translational impacts to other plant species that are critical to global agricultural sustainability.

(Source: Crop Biotech Update, International Service for Acquisition of Agri-Biotech Applications. www.isaaa.org)

Multiple Resistance Genes in Farmed Chickens

A team of investigators has isolated colistin-resistant Escherichia coli from a commercial poultry farm in China. Colistin is an antibiotic of last resort against certain bacteria. The research is published 14 May 2018 in Antimicrobial Agents and Chemotherapy. In the study, as part of ongoing surveillance, the researchers from Key Laboratory of Sichuan Province, Sichuan University collected rectal swabs from randomly selected chickens in multiple commercial chicken farms in China. The researchers found that E. coli from the chickens often carried multiple resistance genes, including one copy of the colistin-resistance gene mcr-1, and one copy of the resistance gene, mcr-3. This is the first report of these two genes on a single plasmid. "The coexistence of mcr-1 and mcr-3 in E. coli isolates may pose a huge threat to public health," said Dr. Hongning Wang, PhD, Professor of Animal Disease Prevention and Food Safety, Key Laboratory of Sichuan Province, Sichuan University.

Plasmids are genetic elements that can jump from one bacterium to another, and sometimes even from one species to another, often spreading resistance genes.The resistance genes were contained on a type of plasmid known as IncP. The researchers also found circular pieces of DNA bearing mcr-3, which were derived from IncP plasmids. These so-called circular intermediates often contain "insertion sequences" that encourage their integration into other plasmids, hastening spread of the resistance genes.

(Source: Agriculture and Food News, ScienceDaily. www.sciencedaily.com)

Farming Fish Saves Land, Analysis Finds

To satisfy the protein demands of an anticipated nearly 10 billion people by 2050, the United Nations' Food and Agriculture Organization (FAO) and researchers around the world estimate current animal production will need to grow by an average of 52 percent. Meeting this need without pushing the environment to the brink will be critical. New evidence shows seafood from aquatic farming -- aquaculture -- can help feed the future global population while substantially reducing one of the biggest environmental impacts of meat production -- land use -- without requiring people to entirely abandon meat as a food source.

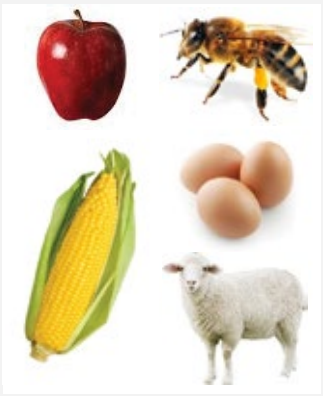
A new study from UC Santa Barbara's National Center for Ecological Analysis and Synthesis (NCEAS) found that the amount of cropland required to support future protein needs with more farmed aquatic animals would be significantly smaller than if terrestrial livestock production met those needs. This research is the first land-use analysis of future food systems to focus on aquaculture -- the world's fastest-growing food sector -- and helps reveal its potential role in conservation and food security.

The findings appear in the Proceedings of the National Academy of Sciences.

"While aquaculture can add some pressure because -- ultimately -- it is a food production system, our study demonstrates the relative amount is minuscule compared to terrestrially farmed animals," said lead author Halley Froehlich, a post-doctoral researcher at NCEAS. "Aquaculture is not going to be the main strain on future crop feed and land use. It is -- and will likely continue to be -- terrestrial livestock."

(Source: Agriculture and Food News, ScienceDaily. www.sciencedaily.com)

Believe it or not!



- Apples are a member of the rose family.
- Each worker honey bee makes 1/12th teaspoon of honey in its lifetime.
- Through about 17,000 tiny pores over its surface, an egg can absorb flavors and odors.
- Each tassel on a corn plant releases as many as 5 million grains of pollen
- There are 914 different breeds of sheep in the world.

Calorie Chart

Food Type	Quantity	Calories (KCals)
Sugar	5 gm	20
Honey	5 ml	16
Brown Sugar	5 gm	16
Jam/Jelly	1 Tbsp (20 gm)	55
Butter	1 Tbsp	45

Source: www.nriol.com

Tips

Mulching is one of the most beneficial practices a homeowner can use for better tree health. Mulches are materials placed over the soil surface to maintain moisture and improve soil conditions. However, improper mulching materials and practices may have little, or even negative, impact on the trees in your landscape.

Benefits of Proper Mulching:

- Helps reduce soil moisture loss through evaporation
- Helps control weed germination and growth
- Insulates soil, protecting roots from extreme summer and winter temperatures
- Can improve soil biology, aeration, structure (aggregation of soil particles), and drainage over time
- Can improve soil fertility as certain mulch types decompose

(Tips courtesy: treesaregood.com)

Sharing is caring!

Do you know where the world's largest orchid garden is? It is located at Singapore. Last year, over 60,000 plants bloomed inside this garden known as the Singapore's National Orchid Garden. It has an extensive collection that includes 600 newly created hybrid species.

Interestingly Singapore's national flower, the Papilionanthe "Miss Joaquim," is a mix of two species, Vanda Hookeriana and V. teres, which was hybridized in the 1890s by an Armenian horticulturalist, Agnes Joaquim, living in Singapore then. More than 200 of the garden's orchid hybrids are named for foreign dignitaries and heads of state.