

Appropriate Information can Help to Improve Farm Output Price

Formaldehyde is a naturally occurring organic compound composed of carbon, hydrogen and oxygen. It has a simple chemical structure of CH_2O . When found naturally formaldehyde is a colorless gas, however, commercially it is distributed in liquid form as formalin. Recently it has been discovered that commercially produced formalin is being used as additives in fruits, vegetables and fishes for preserving longer period of time. This is a major concern for our daily urban life since formalin which is used as additives in food is tremendously harmful for human body. But there is one more thing we have to consider in mind that formalin also grows naturally inside fruits, vegetables and trees but we have to know how much formalin grows inside naturally inside that particular crop. Fruits in the tropical regions have the characteristic of growing formaldehyde inside in ripening stage like in mango, banana, litchi and inside vegetables like potato, cauliflower, cabbage etc. These fruits and vegetables have

formaldehyde from 2.3 mg/kg (i.e. PPM) up to 60 mg/kg (i.e. PPM). Recently a "formaldehyde tester" from Environmental Sensors, USA is being used by govt. agencies as well as private organization for detecting formalin inside fruits and vegetables which has the ability to count 0-30 PPM formalin. As this instrument detects even naturally grown formalin inside fruits and vegetables leading misinterpretation about formalin contamination. As a result consumers are being de-motivated to purchase our major cash crop like mango and other fruits and being diverted to the imported fruits and vegetables. Now to get rid of this misinterpretation we can standardize the testing of formalin contamination which can be initiated by our government and our media should take the responsibility about information dissemination regarding formalin contaminated local fruits and other vegetables which will eventually help our farmers to get proper price of their produced crops in their farms.



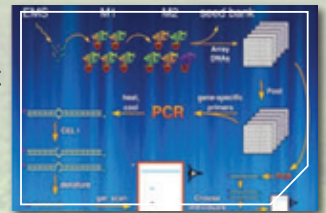
Contents

- 3 Letter from Prof. Lutfur Rahman
- 4 - 5 Innovations and New Products
- 6 - 10 Events and Activities
- 10 - 14 Agri-tech and Communication
- 15 - 16 Readers' Corner

3

The TILLING Technique: Paving the way for Crop Breeding

Genomic modification for crop breeding has been popular to increase the pace of varietal development for quite some time now.



4

Innovation from ACI Fertilizer



The color and brightness of fruits and some vegetables & the sweetness of fruits are very important to attract the target customers.

6

MoU signing ceremony between ACI Limited and Sher-e-Bangla Agricultural University

ACI Agribusinesses of ACI Limited has established the Advanced Seed Research & Biotech Centre (ASRBC) for molecular breeding programs to develop stress tolerant crop varieties.



11

Project Launched to Harness Resilient Traits from African Rice



The Africa Rice Center (AfricaRice) has launched a 5-year project to rapidly identify and harness high-value genes from *Oryza glaberrima*

EDITORIAL BOARD

Advisory Editor

Prof. Dr. Lutfur Rahman
Adviser, ACI Agribusinesses

Editor

M. Saifullah
Head of Strategy
ACI Agribusinesses

Assistant Editor

Ehsanul Karim
Executive
ACI Agribusinesses

Members

Yusuf Alam
Assistant Product Manager,
ACI Fertilizer

Mohammad Mizanur Rahaman
Assistant Product Manager,
ACI Seed

Dr. Md. Amjad Hossain
Product Manager,
ACI Animal Health

Md. Shiful Alam
Coordination Officer,
ACI Motors

Md. Mustafizur Rahman Khan
Marketing Manager,
ACI Cropex

Dr. Akter Hosain
Head of PDS,
ACI Seed

Adeeba Raihan
Research Specialist,
Advanced Seed Research
& Biotech Centre
Asif Faisal Rummy
Assistant Product Manager
ACI Motors

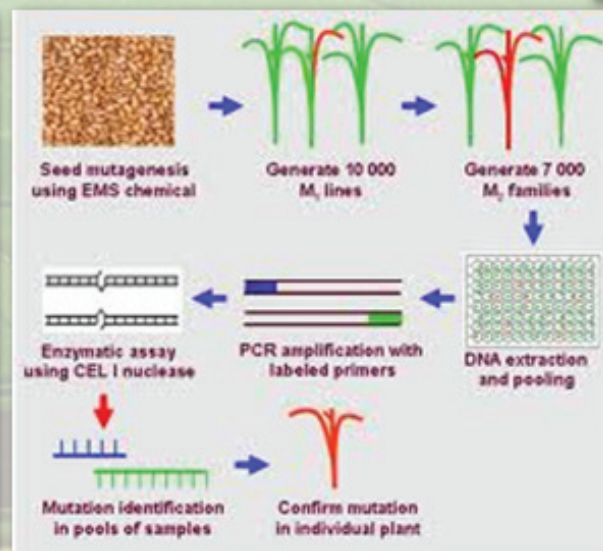
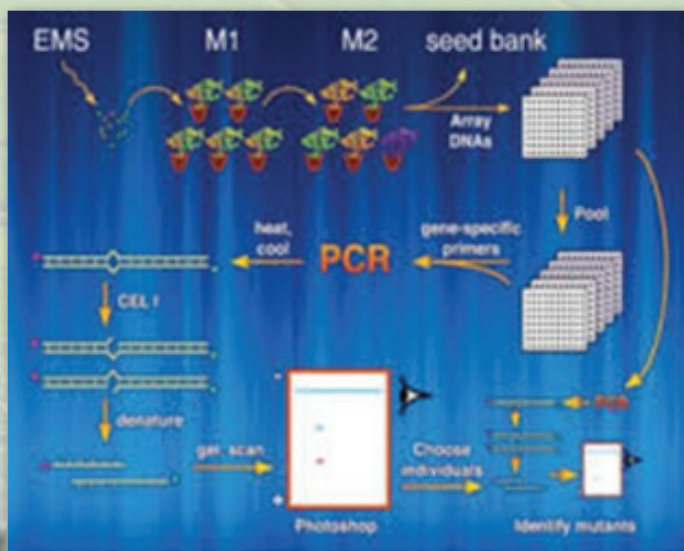
Letter from Prof. Lutfor Rahman

The TILLING Technique: Paving the way for Crop Breeding

Genomic modification for crop breeding has been popular to increase the pace of varietal development for quite some time now. Various techniques have been employed starting from accepted, but less specific conventional breeding to transformation to produce transgenic crops, which is more controversial. One of the techniques is the use of forward genetic approach by identifying a mutation in the specific gene linking it to the phenotypic change and then identifying the gene in the mutated organism. Here large mutated populations have been created and screened for modifications by observing their phenotypes. The sequence of the gene responsible for the modified phenotype can be identified through map-based cloning, but this approach is both time-consuming and labor-intensive. The reverse genetics technique replaced the latter since it is based on the direct modification of a gene structure hence its activity, followed by an analysis of the related change in plant phenotype.

The TILLING technique was reinvented by breeders a decade ago as a substitute to transformation. It soon became a valuable tool in crop breeding as a substitute to the transgenic approach. The feasibility of TILLING has already been demonstrated for a large number of economically important crops, such as rice, oats, barley, wheat, maize, sorghum, soybean, rapeseed and tomato.

This technique combines the high frequency of point mutations induced by chemical mutagenesis along with sophisticated techniques for discovering gene mutations. The most important advantage of TILLING is that it can be applied to any plant species, regardless of its genome size, ploidy level or method of propagation. Another great advantage of TILLING technology relies on the ability of chemical mutagens to create a broad scale of mutations. This is particularly advantageous since it not only increases the possibility of developing traits which are of interest, but also creates traits which can be demandable. From the private sector perspective, this is beneficial since there is a possibility that a large number of stable mutant progeny can be developed in a shorter period of time for appropriate selection. TILLING does not require transformation and thus it is recommended as non-GM technology, so when using TILLING, GM procedures and controversies are avoided. Moreover, TILLING is not technically very sophisticated and can be performed at a relatively low cost with larger potentials for increased genetic diversity in crop plants. The Advance seed Research and Biotech Centre (ASRBC) of ACI Ltd is pioneering the works with TILLING in different crops not only aiming at creating genetic variability but also to develop varieties with traits of demand.



Innovations and New Products

Innovation from ACi Fertilizer

The color and brightness of fruits and some vegetables & the sweetness of fruits are very important to attract the target customers. So the farmers always try to improve the color, brightness & sweetness of the mentioned crops through different practices. Most of the time, the practices are unethical which creates toxicity in the crops. Considering this demand, **ACI Fertilizer** launched “Color Win” for improving color, sweetness & shelf life of fruits & vegetables. Color Win will be the unique product in the market in color & sweetness development segment which will get fast mover advantage. The main contents of the product are – Polysaccharide, Amino Acid, Vitamin, Phosphorus, Potassium, Calcium, Magnesium, Boron, Zinc & Other essential plant nutrients.



ACI Animal Health Innovation

ACI Animal Health has launched 3 new products in May 2014, which are highly beneficial for the livestock, fish and poultry sectors of Bangladesh. The first product, **Longosona** is an injectable drug which is launched with the tagline “no more pain”. The reason behind this is that large animals such as cows and bulls suffer from protein catabolism and arthritis. The steroids available in the market provide relief for a short period of time. But this product increases the protein metabolism and controls arthritis, thus giving relief to associated pain. A single dose administration gives relief to pain for 14-21 days. The active ingredient in this product is dexamethasone-21 Isonicotinate INN 1 mg and it is available in a pack size of 50 ml.



Innovations and New Products

ACI Animal Health Innovation

Amino 3 Plus contains DL-Methionine, L-Lysine, Choline chloride, D- Biotin, Vitamin B12, Activated charcoal and Maize starch. This product is beneficial for the cattle, poultry and fish industries, since without sufficient protein production levels drop. The feed used by these industries is low in amino acid and hence Amino 3 Plus can be mixed to raise the amount. This amino acid mix not only

increases production but also increases the healing process, increases conception rate, increases specific immunity, detoxifies internal toxins, is a high energy source, controls metritic, prometra and liquria in female animals. This product is available in a 100 g pack size.

Fra C 12 Dry is composed of α Mono Laurine and available in a pack size of 100 g. The product acts

against all fat enveloped viruses like FMDV, PPRV, AIV, NCDV, POX V, PAPILOMA V, IBRV, HERPES V and RABIES V. The unique characteristic of this product is that at the moment an antiviral drug is not available in the market which can kill such types of viruses hence Fra C 12 is standing alone to help the farmers.



ACI Animal Health Innovation

AGal-Pro was launched by ACI animal health for the First Time in Bangladesh which is a combination of different enzymes major in Alpha-galactosidase based enzyme. AGal-Pro increases nutrient digestibility and absorption, leading to significant improvements in the nutritional value of poultry/aqua feed. AGal-Pro Plus is used in Poultry & Fish under following cases:

1. Improves FCR (Feed Conversion Ratio) and growth rates.
2. Maximizes the nutritive value of Poultry and Aqua feed.
3. Significantly increases the ME (Metabolic Energy) of the Feed.

BIO-PLUS is a probiotics for pond water purification which is an outstanding technological innovation project of Korean Govt. This product was developed by Marine &

Environment Research Institute of Cheju National University. It is Non Toxic, Eco Friendly. It helps to remove H₂S From bottom mud of the pond. It also has the capacity of improving FCR and water quality. Dose: For 80 decimal ---**Bio-Plus** 1 Ltr + 3 Kg Molasses + 100 Ltr water mix thoroughly & Keep 24 hrs then use.



MoU signing ceremony between ACI Limited and Sher-e-Bangla Agricultural University

ACI Agribusinesses of ACI Limited has established the Advanced Seed Research & Biotech Centre (ASRBC) for molecular breeding programs to develop stress tolerant crop varieties. In order to strengthen this initiation ACI Limited has entered into collaborative research through Public-Private Partnership with universities and NARS institutes. The most recent agreement took place on 27 April 2014 at

the Sher-e-Bangla Agricultural University (SAU), Dhaka where a MoU was signed between ACI Ltd and the University. Dr. F. H. Ansarey, Executive Director of ACI Agribusinesses signed on behalf of ACI Ltd, while Prof. Dr. Mohammed Ali, Dean, Post Graduate Studies signed on behalf of SAU. The ASRBC has been working closely with SAU regarding varietal development of vegetables and will now

expand the scope of research through this new collaboration. Prof. Lutfur Rahman, Advisor of ACI Agribusinesses, Prof. Mohammad Sadat Ullah, Vice Chancellor, Prof. Mohammad Shahidur Rashid Bhuiyan, Pro-Vice Chancellor, Deans and Professors of various departments of SAU and scientists from ACI were present during the signing ceremony.



Hybrid Rice Trial at BSMRAU

Three foreign principals visited ACI Seed's hybrid rice Trial. MAHCYO from India which is basically a seed company also produces Agri-biotechnological products, hybrid seeds, provides biotechnological information visited hybrid rice trial in

Aman at BSMRAU on May 5. Then WinAll on May, 8 and Anhui Longping in China on May, 18, 2014 also visited respectively. ACI Seed has tested 39 foreign hybrid rice seed varieties involving 2 checks. All the delegates consisting rice breeder

and rice agronomist evaluated their varieties in the field and some of the varieties were found suitable for further trial at several locations. A follow up meeting was held with all the delegates on various bilateral business issues.



Events and Activities

Farmers' field days in May 2014

A total of 46 field day events were held on 18 varieties involving 8 crops in 19 districts across the country in May 2014 which was arranged by ACI Seed. The event is highest in last 5 month of the year.

The PDSO Mr. Mahabubur Rahman arranged highest no of 8 field days in Elin and Folon-2 in Mymensingh, Jamalpur and Sherpur in this month. The cucumber variety Elin and Folon-2 are the most popular

brands in these areas. All field days were attended by ASM Mr Hafiz Mollah in association with concerned MO/SO and dealers. These field days have generated a great demand of products.



Retailer Communication for Promoting Hybrid Rice in Late Boro Season

ACI Seed has strengthened its retailer communication for promoting hybrid rice in late Boro season. Recently, the business has arranged two retailer programme at Sathibari and Pargacha, Rangpur. Around 120 seed retailers were present and sharing their popular cropping pattern, agronomic prac-

tices and Seed quality perception and market information. However, based on research the business communicate importance of hybrid rice in late boro season and what is the competitive advantage of ACI hybrid in late boro season. Farmers were extremely motivated

to know the USP of ACI hybrid and expressed their commitment to be associated with ACI Seed. Farmers are expecting massive demonstration for hybrid rice in late boro season so that they can be more concern about ACI hybrid rice seeds.



Events and Activities

Field Day Program on New Hybrid Maize at Maize Cultivated Area

Recently ACI seed has arranged a Field day program on its Trial plots of Hybrid Maize ACI MZ001, ACI MZ002 and ACIMZ003 at one of the Maize cultivated area, Meherpur. Around 25 seed retailers, respected Dealers and 50 farmers along with few lead maize farmers were present and selected the variety/varieties through participa-

tory variety selection process for future marketing.

The dealer, retailer, advocate farmers visited the field and expressed their opinion regarding all three maize varieties. After detailed sharing on these three varieties the participants were selected ACI MZ001 because its kernel colour, cob positioning, yield potentiality,

plant height and reaction against leaf blast disease. However, ACI MZ003 can also be selected because of its higher yield potentialities among these varieties. The business expects to increase market share by introducing these varieties in coming season and create a strong ACI footprint in Bangladesh Maize market.



Seminar on Soil Health Management for Tea Plantation:

ACI Fertilizer organized a seminar on “Soil Health Management for Tea Plantation” dated on 12th May 2014 at Bangladesh Tea Research Institute (BTRI) Auditorium, Sreemongal, Moulvibazar. The Scientists of BTRI & the Managers of Tea Garden participated in the seminar. The objective of the seminar was to discuss about the importance of balanced fertilization for keeping the soil in superior condition to produce quality tea at optimum level. Dr. Md. Asaduzzaman Khan, Professor, Sher-E-Bangla Agriculture University presented the key note paper in

the seminar. He discussed about the characteristics & current status of tea soil in Bangladesh. He showed the current status of organic matter & essential plant nutrients in tea soil and discussed about the role of organic matter & plant nutrients to keep the soil healthy & to produce tea at optimum level. He also gave importance on soil test before fertilizer application in tea garden. He showed the tea production status of India, Sri Lanka, China & other tea producing countries and discussed how they produce best quality tea by managing their tea

soil properly. Mr. Sarder Ali Mortuza, Sales Manager, ACI Fertilizer discussed about ACI Fertilizer Solution for tea production & gave importance on using quality product for getting the best result. He showed the trial report of ACI Fertilizer; like – Organic Fertilizer, Gypsar, Bioferti etc. conducted by BTRI. Mr. Mustafizur Rahman Khan, Zonal Sales Manager, ACI Fertilizer gave the opening speech in the seminar & Mr. Yusuf Alam, Asst. Product Manager, ACI Fertilizer conducted the program.



Events and Activities

Hygienic Fruits for ACI Cropex consumers

ACI Cropex tried to understand the people's concern regarding to purchase fruits from the unhygienic fruit's market. By understanding their concern, Cropex started working to launch branded mangoes which are naturally ripened, fresh, hygienic and safe for the consumers since April 2014. They have organ-

ized several meetings with traders, farmers, katalyst for setting strategies to success their campaign. As part of their strategic plans, Cropex arranged a training workshop for the mango cultivators, showing them the way to manage post harvesting process, plucking procedures at sharsha, Jessore last 15th of May

2014, which was really exclusive for those mango farmers. Finally the business introduced mango towards its consumers on 29th May 2014. Before addressing to the market, they have set up a target group of consumers, who are really conscious about their health to get the fresh and hygienic fruits.



Dealer Manager Meeting: Motivation through learning

ACI Motors has arranged a 2 days training session for a total of 30 Dealer Managers from 10-11 May to educate them on sales technique and product features in ACI Center. Dealer Managers are the front line individuals who directly interact with

customers. So with this unique training session ACI Motors tried to enhance the skill of these managers which will impact at time of sales of ACI Products. Also to motivate these important groups of people, ACI Motors arranged a day long

program in Fantasy Kingdom & Nation Memorial. In addition with gifts and training certificates was given to them for successfully attending in the training.



Events and Activities

Mechanics & Farmer Meeting in Mymensingh & Cox's Bazar

To promote and create emotional bond with reference group of power tiller and diesel engine ACI Motors arranged 3 Mechanics & Farmer Meeting in Gouripur & Tarakanda at Mymensingh and at Cox's Bazar. Here PT & DE Mechanics, Rental Service Provides, Happy Farmers, Dealers were present to make the

program successful. These stake holders have shared their view and ACI Motors has described the benefit of ACI Motors Products. These meetings create buzz among the prospective customers and generates instant sales of newly introduced power tiller "R 24".



Demonstration of ACI Reaper

ACI Motors was established with an objective to market high quality farm machineries in order to support Bangladesh agriculture. ACI Motors now ensures complete farm mechanization solution to the farmers with the introduction of the agri-machineries. With this trend ACI Motors marketed ACI Reaper of Kubota technology which can reap rice and wheat. It is imported

directly from Vietnam -a reaper of original Honda Engine. ACI Reaper is able to reap 100 decimal or 1 acre of rice or wheat and 87% cost is minimized by using this machine. The Farmers get returned of their capital within a season. It helps to solve the manpower problem during harvesting and able to reap more crops in less time; as a result the

crops are prevented from disaster. There is no loss of straw due to reaping from the bottom of the crops. Less petrol is needed to run this machine; as a result production cost is minimum. The Honorary Ambassador of USA 'Dan Mozena' recently visited a demonstration of ACI reaper which is a clear indication of their success.



Project Launched to Harness Resilient Traits from African Rice

The Africa Rice Center (AfricaRice) has launched a 5-year project to rapidly identify and harness high-value genes from *Oryza glaberrima* – known commonly as the African rice as it is a cultivated species that is found only in Africa – for developing new rice varieties that can cope with the increasing challenges of drought, flooding and soil-related constraints such as iron toxicity in the continent.

The project “Rapid mobilization of alleles for rice cultivar improvement in sub-Saharan Africa” will be implemented by AfricaRice in partnership with the National Institute of Agrobiological Sciences (NIAS), Japan; Cornell University, USA; the International Rice Research Institute (IRRI), Philippines; and the National Cereals Research Institute (NCRI), Nigeria. The project is supported by

the Bill & Melinda Gates Foundation.

Currently, rice breeding programs are mainly sourcing genes of stress tolerance from *Oryza sativa* (known commonly as the Asian rice). Research at AfricaRice has shown that the African rice is a rich repository of genetic material that can provide tolerance to several stresses, particularly drought, iron toxicity and flooding during germination. As a first step, the project will identify genes/gene-based markers related to iron tolerance, drought tolerance and anaerobic germination ability. The genes will then be incorporated using marker-assisted backcrossing (MAB) into commercially valuable rice varieties without losing useful characteristics which make them popular with farmers.



Isolation of Fungi Associated with control of Nematodes in Sugar Cane

Phytoparasitic nematodes are the important pests of sugar cane and controlled with the application of highly toxic chemicals. The most significant pests include the phytoparasitic nematodes, which cause global economic losses estimated to be equivalent to 15% of the production of this crop (Koenning et al., 1999). These phytoparasites cause necrotic lesions and destruction of the secondary roots, causing galls, nodules and malformations that impede the uptake of water and nutrients necessary for develop-

ment.

A study isolated fungi from the sugar cane phytoparasitic nematode *Criconemoides* sp. and tested the pathogenicity of one of these isolates on the nematode community of the sugar cane producing region of Veracruz, Mexico. From 48 h after in vitro infection, blastospores and mycelia were observed within the body of the nematode. The fungus used in the experiment efficiently reduced the population of ectoparasitic and semiendoparasitic nematodes.



Scientists Promote Char Land Agri And Biotech For Northern Districts Of Bangladesh

Bangladesh Biotechnology Information Centre (BdBIC), Shobuj Bangladesh 24, Practical Action, RDRS and Helvetas organized a 2-day consultation meeting at Rangpur District on 11-12 April 2014 where around 100 scientists, university professors, NGO and private industry experts, farmers and journalists have attended and contributed to char land livelihood improvement.

Professor Dr. M.A. Sattar Mondal, the former Vice Chancellor of Bangladesh Agricultural University (BAU) and former member of Planning Commission of Bangladesh in his

speech as the guest of honor has suggested that the perennial munga of river devouring poor northern districts of Bangladesh can be mitigated through char land agriculture where the farmers are producing pumpkin with the support of NGOs. He also endorsed the use of biotechnology because of the increasing popularity of maize on char land and sandy soil of northern region. This practice can be modernized with mechanization and the introduction of Bt maize and drought resistant maize for cost reduction on spraying and safeguarding the environment.



Rothamsted Research is granted permission to carry out a field trial with GM Camelina plants

Camelina sativa is a flowering plant in the family Brassicaceae. This plant is cultivated as oilseed crop mainly in Europe and in North America. The crop is now being researched due to its exceptionally high levels (up to 45%) of omega-3 fatty acids, which is uncommon in vegetable sources. Seeds contain 38 to 43% oil and 27 to 32% protein. Over 50% of the fatty acids in cold-pressed camelina oil are polyunsaturated. The oil is also very rich in natural antioxidants, such as tocopherols, making this highly stable oil very resistant to oxidation and rancidity. It has 1 - 3% erucic acid. The vitamin E content of camelina oil is approximately 110 mg/100 g. It is well suited for use as a cooking oil. It has an almond-like flavor and aroma. Because of its apparent health benefits and its technical stability, camelina oil is being added to the growing list of foods considered as functional foods.

Scientists at Rothamsted Research, who receive strategic funding from

the Biotechnology and Biological Sciences Research Council, have developed Camelina plants that accumulate omega-3 long chain polyunsaturated fatty acids (LC-PUFAs) in their seeds and the purpose of the proposed trial is to evaluate in the field the performance of this trait. The approach was towards developing a flexible and sustainable supply of omega-3 LC-PUFAs through engineering a crop plant with the capacity to synthesise these fatty acids in seeds. Rothamsted Research have over the years developed genetically engineered Camelina plants that can successfully produce omega-3 LC-PUFAs in the lab and in the glass house.



India set to Approve GM Jute, Second Biotech crop after Cotton

India is likely to see commercialization of genetically modified (GM) jute in a month. Developed by the Kolkata University, GM jute is set to be sent for commercialization approval to the regulator – Genetically Engineering Approval Committee (GEAC), next month.

If approved, GM jute would be the second crop of its kind after GM cotton was approved for commercialization in 2002 with huge success. Farmers expect that the success of GM cotton will be replicated in jute.



Sweet potato Omics and Biotechnology in China

Sweet potato, *Ipomoea batatas* (L.) Lam., is an important food and industrial material crop throughout the world. It is also an alternative source of bio-energy as a raw material for fuel production. The improvement of this crop by conventional hybridization is limited because of its high male sterility, incompatibility and hexaploid nature. Biotechnology offers great potential for improving disease, pest or stress resistance as well as the nutritional quality of sweet potato.

In the past decades, great progress in sweet potato omics and biotechnology has been made in China. An efficient system of embryogenic suspension cultures has been developed for a wide range of sweet potato genotypes. Somatic hybridization has been applied to overcome cross-incompatibility between sweet potato and its relatives, and has generated useful interspecific somatic hybrids. Novel mutants have been obtained by cell induced mutation and in vitro selection.

Several genes related to stem nematode resistance, salt tolerance, carotenoid biosynthesis, and anthocyanin biosynthesis have been cloned. *Agrobacterium tumefaciens*-mediated transformation has been standardized for important cultivars, and has been used to produce transgenic plants resistant to diseases, stresses and herbicides. Molecular markers linked to a stem nematode resistance gene have been developed.



Protection of yellow head virus infection in shrimp by feeding of bacteria expressing dsRNAs

Although prevention of shrimp mortality from yellow head virus (YHV) infection via dsRNA injection has been well demonstrated for many years, it has not yet been applied in a farm culture because of its impracticality. Hence, oral administration of dsRNA becomes an

alternative and desirable approach. Researchers in Thailand were the first to demonstrate that oral feeding of *Escherichia coli* expressing shrimp Rab7 gene (dsRab7) or YHV protease gene (dsYHV) could inhibit YHV replication and lowered shrimp mortality. After 4 days of continuous

feeding of dsRNAs, strong inhibitory effect on shrimp mortality was observed in which dsRab7 gave the highest effect (70% reduction from the control) whereas dsYHV showed a 40% reduction.



Readers' Corner



Did you know???

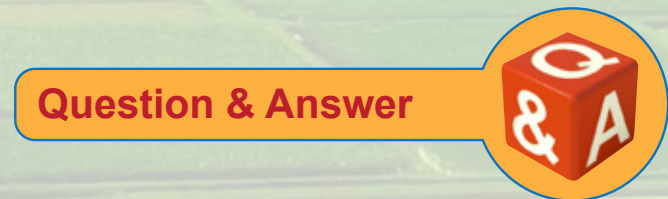


unless food is mixed with **Saliva** you can't Taste it.
 no two **Corn** flakes look the same
 reindeer like **Bananas**
 birds need gravity to **Swallow**
 lobsters **Blood** is colorless but when exposed to **Oxygen** it turns blue



Calorie Chart

Vegetable (Per 100gm)	Calories	Fat (g)	Carbohydrate (g)	Protein (g)
Broccoli	31	0.34	6.04	2.57
Cauliflower	25	0.10	5.30	1.98
Chili Peppers	60	0.66	13.22	2.80
Green Peppers	30	0.25	6.91	1.28
Pumpkin	30	0.12	7.54	1.16
Squash	39	0.15	9.96	1.10
Sweet red peppers	39	0.45	8.98	1.48
Tomatoes	32	0.36	7.06	1.58
Yellow sweet corn	132	1.82	29.29	4.96
Asparagus	27	0.16	5.20	2.95
Celery	14	0.17	3.00	0.70
Leeks	54	0.27	12.59	1.34
Onions	67	0.13	16.18	1.47



Question & Answer

I'm a rice cultivar. Recently I've noticed in my rice field some old leaves are getting yellow and growth of the plants is been hampered as well as some early fruiting has been observed. This made less crop production in the field. Can you give me a suitable suggestion what can I do?

Md. Kajol, Sariakandi, Bogra

Answer: Dear Mr. Kajol this problem in the rice field occurs when there is deficiency of nitrogen in the plants. You can use 15-20 kg of Ammonium sulphate in each acre of land depending on the soil condition. I believe this will help resolve you problem

WORD Game

Figure out the Fruits from the box!



A	K	O	L	I	M	E	C
B	I	R	E	G	E	P	A
F	W	A	M	R	L	E	P
R	I	N	P	A	O	A	R
U	F	G	L	P	N	R	I
I	N	E	U	E	L	G	C
T	L	E	M	O	N	E	O
S	C	H	E	R	R	Y	T

***To win exciting prizes, take a picture of this page with marked answers and send the picture to biolife@aci-bd.com by June 2014

Winner & Answer of the previous Word Game!!!

Al Kafi, Product executive, ACI Animal Health

Babaco	B	A	B	A	C	O	L	S	S	P	R	O	U	T	T	A
Boysenberry	O	R	T	O	R	F	E	Z	D	A	L	N	Q	T	A	S
Tangerine	Y	B	A	N	G	R	A	P	E	S	P	W	T	A	V	P
Grapes	S	J	N	G	N	E	K	W	D	S	N	D	I	N	O	A
Passionfruit	N	T	E	V	G	I	W	S	J	O	E	M	P	R	A	A
Quince	B	X	R	F	G	M	M	L	H	N	N	S	L	G	D	G
Durian	E	U	I	N	I	P	G	W	A	F	D	U	R	A	I	N
	R	R	N	N	R	V	B	A	T	R	I	P	W	M	J	S
	R	H	E	B	A	R	B	R	T	U	V	C	Y	O	X	Y
	Y	E	B	U	J	U	J	Q	D	I	E	V	N	P	T	W
	F	E	N	N	E	L	I	U	R	T	K	C	A	J	X	S
	T	I	W	H	Q	U	I	N	C	E	Y	Y	A	M	P	L

ACI Agribusinesses
 ACI Centre
 245 Tejgaon Industrial Area
 Tejgaon, Dhaka, Bangladesh
 Phone: + 88 02 887-8603
 E-mail: biolife@aci-bd.com
sectoedab@aci-bd.com

www.aciagribusinesses.com



ACI Agribusinesses
 Creating Wealth for Farmers

ACI Agribusinesses, the leading agriculture integrator in Bangladesh, is dedicated to gaining prosperity of Bangladesh through food security. ACI Agribusinesses offers complete solutions to farmers and also educates them about the technical know-how.