BIOLIFE

Letter from Executive Director, Agribusiness

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ACI Agriculture Technology Fair, 2014

ACI Agribusiness's vision is to create wealth for the farmers, resulting wealthy villages and wealthy Bangladesh. In order to achieve this motto, it provides complete solution to the problem of farmers, ensuring the highest level of impact in their lives and lead to nation's prosperity. To showcase how ACI attempts to develop farmers' lives with quality products and innovative technologies, it arranged ACI Agriculture Technology Fair 2014 on 28th of October, in ACI Centre premise.

The fair comprises of three major elements: a prosperous village, a village market (haat) and a village fair. Visitors had the opportunity to see a typical village where farmers' daily lives and living were portrayed. So, farmer's house, land with seed transplantation, pond and fishes, poultry and cattle animal etc. included in the village setup. The village market includes various traditional stalls such as Pitha shop, tea stall, fuchka cart etc. and model dealer shops setup with products from ACI Seed, ACI Fertilizer, ACI Motors, ACI Animal Health, ACI Cropex, ACI Godrej Agrovet and ACI Crop Care. The village fair entertained visitors with folk (Baul) songs and advanced agri-machineries' from ACI Motors were demonstrated. Moreover, Advanced Animal Genetics, high tech Seed genetics and Agriculture Infrastructure Development showed innovation and technological advancement in their stalls. The genetic technologies displayed various facilities developed for carrying out molecular breeding for furture agriculture development. Besides, Premiaflex Plastics showed a large number of plastic packaging samples it provides for giant consumer goods companies. The initiative explains the prosperity of Bangladesh through agriculture development and how ACI Agribusiness's holistic approach can build a better and wealthy Bangladesh.

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Enlarging and Maintaining the Plant Biodiversity through Plant Breeding

Prof. Lutfur Rahman
Advisor, ACI Agribusiness & Head of Advanced Seed Research & Biotech Centre

With the advent of more specialized commercial agriculture not only in plants but also in livestock and fisheries the diversity in each of the fields are getting reduced. This is being reduced mostly due to increasing homogenous population for facing better markets, over population reducing the natural habitats and using more of the specially developed varieties of crops and breeds of livestock and fisheries. Bangladesh is one of the most important natural biodiversity areas of the world where a large flora and fauna of many diverse species have been thriving over thousands of years.

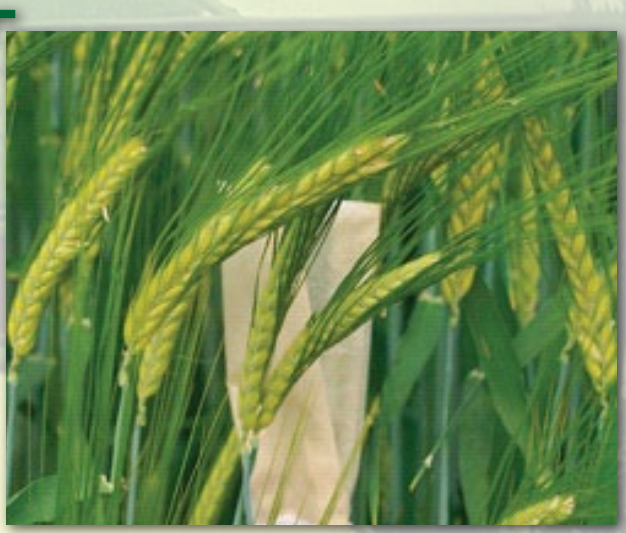
To most of the plant breeders of the world, plant breeding process helps the development of varieties that suits needs of the community. This is therefore a system whereby some materials are considered better over the others and when those are used in large extent the others of the nearby gene pools or even the donors of variety get reduced due mostly through non-use. The plant breeders of any country can thus help in maintaining part of the biodiversity and even enlarging the same through a continuous release of by-products of the breeding means the materials those are not selected as varieties to the nature. Also, the participatory plant breeding can assist in the same way means without getting all the test materials withdrawn by the breeders from the field.

However, the recent approach of plant breeding where GM crop varieties are being developed, it is not possible to maintain the biodiversity not to speak of enlarging the same through plant breeding. When the breeders of recent time have become more and more interested in specific gene search and its use either through transgenic or cacogenic forms a new idea and a technique is necessary to maintain and even enlarge the biodiversity.

Breeders do understand the traits of the important varieties under constant large scale use in the cultivation system which, in other way, put pressure on the other cultivars or land races. So, they can plan for developing micro-mutants from those varieties and if possible select a few as new materials and release the others in the nature to remain as variables from the same major source. This is like enhancing the natural mutation force to conserve the created variations in the nature for future use. From such materials of TILLING (Target Induced Local Lesions In Genomics) using gene sequencing and QTL determination the breeders can also find out very promising lines to register as varieties. In doing so, a comprehensive study on genomics will be required.

Although we are scared about the intervention of GM crops but the information generated up to December 2013 (James 2013) clearly indicates that USA, Brazil, Argentina, India, Canada and China covers 150.1 million ha of the GM crops lands against 595.6 million ha arable lands. In these countries, the contribution of agriculture to GDP is 8% only. The pattern is much different from that of Bangladesh. The other side of it is only Soybean (48%); Cotton (33%), Corn (14%) and Canola (5%) cover 100% of the world GM crop acreage of 175.3 million ha. (James 2013). These crops are again not endemic to our country as well as not quite comprehensively being grown. Also, these are commercially cultivated introduced crops of limited genetic diversity.

Although Bangladesh government has approved the cultivation of four varieties of Bt Brinjal without considerable tests, the interest of both private sector seed industries and the farmers are not conducive to its faster adoption. This indicates that the introduction of GM for cultivation and use in Bangladesh will take long time and by that time if the local genetic materials are well utilized then the country will have much higher diversity in the cultivated crop species. However, our interest should be to focus on the use of PGR traits of our health needs and those have high commercial as well as industrial use potentials.



Crop Museum and Adaptive Trial at ACI-RU Joint Research Field Station in IBSc, Rajshahi

To provide objective information and help farmers select crop brands with varieties best adapted to their locations, ACI Seed undertook a joint attempt to evaluate the performance of exotic and own hybrid varieties at Innovation Center of Institute of Biological Sciences (IBSc), Rajshahi University.

In Rabi (winter) 2014, 200 entries (own and exotic hybrids) of different crops are being evaluated in the field station. Entries are grown in replicated plots so that factors affecting their yield and characteristics are nearly the same as much as possible for all entries. The main crops are cucumber, sponge gourd, ridge gourd, bottle gourd, brinjal, chilli, tomato, carrot, lettuce, musk melon, maize, cabbage, cauliflower, knolkhol etc.

A crop museum or Plant Variety Demonstration of all possible Rabi varieties of ACI Seed is also undertaken at this field station. The demonstration will serve as a learning resource for Agriculture and Botany students of Rajshahi University. Students will be able to observe the growth and development of each crop throughout the year. Additionally, they will be able to collect data on problems of the crop for further research and development. The business staffs, seed dealers of ACI, and extension workers will also be able to get oriented with the demonstration.

ACI Seed's 100 Days Road Show, Visiting 300 Upazillas of 60 Districts

ACI Seed continues with the 100-day road show program which started from 17th September 2014 for the rural people of Bangladesh. This program aims to inform the local people about various modified seeds by ACI and also minimize the gap within the target audience specially the farmers. To give a glimpse about ACI seed's products, activities, two cars containing the logo of ACI Seed are reaching mass people with a target of 60 districts and 300 Upazillas within these 100 days. By now, it has completed the journey in 20 Districts, 72 Upazillas and 232 spots connecting almost 25,000 people who showed a lot of enthusiasms.

In order to provide the best quality product ACI Seed always tries to uphold the relationship with customers, dealers, retailers, and other stakeholders to know their requirement and expectation. This road show is a part of this effort. There are also informative speeches given by the local experts from both government officials and ACI Seed throughout the road show.

To entertain the local people, the road show arranges some interactive games and documentary/short movie shows. Beside this, the farmers and the winners of the games are given free sample of the new seeds. Road Show provides the opportunity to connect with the rural community for our mutual growth.

Prof. Lutfur Rahman wins National Plant Breeding Awards

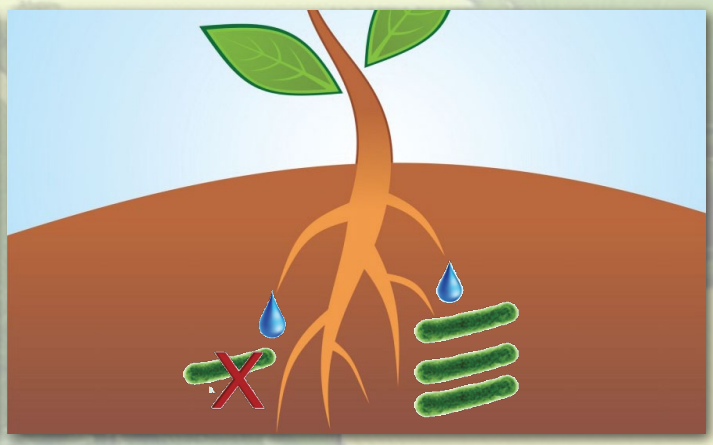
Advisor, ACI Agribusiness and Head of ASRBC received the National Plant Breeding Award from the Plant Breeding and Genetics Society, Bangladesh. The award was given for his lifetime dedication to Plant Breeding for the country.

Prof. M.A Khaleque Mian, Department of Genetics and Plant Breeding Department of Bangabandhu Sheikh Mujibur Rahman Agricultural University also received the National Plant Breeding Award for his lifetime achievement. He has been collaborating with the ASRBC since 2012 on their rice and papaya research programs.

Both the awards were presented by Mr. Nurul Islam Nahid, MP, Minister of Education in presence of an audience of more than 300 people.

Training Program on NEB Application & Marketing for Field Executives

ACI Fertilizer Product Management team arranged a training program on 23-24 October 2014 for field executives of Fertilizer in Bogra and Rangpur area to give a clear direction on NEB application and marketing technique. NEB (Nitrogen Efficiency for Biovaialblity) is a new product to be marketed from November 2014 on a trial basis. It is a blend of natural root exudates. NEB works in harmony with nature, helping the plant accomplish the goal of mutually beneficial relationship with microbes and mycorrhiza. It stimulates beneficial microbes and eliminates bad microbes. As a result, good microbes quickly increase in population. Microbes consume excess Nitrogen that would have been lost to leaching. Nitrogen is released and available to the plant through the microbes. So Nitrogen is available for a long time. If a farmer uses NEB, 50% Urea and 30% cost will be saved while yield will be same or more.



ACI Fertilizer Products Demonstration through DAE-IAPP Project

The Department of Agriculture Extension (DAE) is trying to promote Micro Nutrients & Organic Fertilizer among the farmers all over the country. As a part of this promotion, DAE has initiated to conduct result demonstration in Rangpur and Barisal Area. They are conducting 462 demos on Lentil and 462 demos on Mustard in Rangpur, Kurigram, Lalmonirhat & Nilphamari Districts and 516 demos on Lentil, 516 demos on Mustard & 688 demos on Khesari in Barisal, Patuakhali, Jhalokathi & Borguna Districts through IAPP project. DAE are using ACI Organic Fertilizer and Micro Nutrients in all (2644) demo plots.

Using ACI Fertilizer products in these demonstrations is the recognition of its quality products from important stakeholders.

Export-oriented Farming Solution for Agri Concern from ACI Fertilizer

Agri Concern, an export-oriented agriculture farm, has recently made an agreement to avail all fertilizer solution from ACI Fertilizer. The farm is producing vegetables, potato and maize through modern cultivation practice in Rangpur, Dinajpur and Chuadanga districts. They have started taking ACI Organic Fertilizer, Micro Nutrients & PGR products for their farming from October 2014. The farming area is about 3000 acre and it will be increased in future. Agri Concern is now a satisfied customer of ACI Fertilizer products.

Honorable MP Distributed ACI Fertilizer Products in Bogra for Groundnut Cultivation Project

Department of Agriculture Extension (DAE) has initiated a Project for promoting Groundnut cultivation in Char Area of Bogra District. For distributing fertilizer inputs to Groundnut farmers, they arranged a technology transfer program on 24 October 2014. Honorable MP Mr. Abdul Mannan was the chief guest of the program. He distributed ACI Fertilizer products among the farmers of Shariakandi, Bogra under the Groundnut Cultivation Project.

ACI Motors at EWU Agro-Biz-Expo: Igniting Agro Industrialization Ideas

Recently ACI Motors participated in Agro-Biz-Expo and Idea Sharing seminar at East West University (EWU) in Dhaka. The exposition, held at the university campus on 27 October 2014, was organized by Agro Industrialization Club (AIC) of EWU. As a leader in agri-machineries of the country, ACI Motors showcased and informed the students along with other visitors about its different products and services. The visitors had an opportunity to see the Rice and Wheat Reaper in the daylong event. They also collected information on other products like Sonalica Tractor, Rice Transplanter from ACI Motors representative. The event was inaugurated by Professor Ahmed Shafee, Vice Chancellor of EWU and Air Cdre. Ishfaq Ilahi Choudhury (Retd.), Registrar of EWU. One of the special guests was Dr. Md. Zahangir Alam, Deputy Director (Mass Communication), Farm Broadcasting Officer, Ministry of Agriculture. Mr. Md. Farhan Nahid, Executive, ACI Motors presented the competitive advantages agri-machineries provide with the example of Rice and Wheat Reaper in reducing labor, time and cost of farming. He also emphasized the scope of entrepreneurship for students by investing in agri-machineries to create agricultural support services in their respective rural communities. ACI Motors along with other participants in exposition and the guests of the seminar were awarded with souvenirs at the end of the daylong event. It is remarkable that ACI Motors was the only participant to showcase agri-machineries in the event.

ACI Animal Health with Ceva, Strategy workshop in Myanmar

A team of delegates from ACI Animal Health participated in Ceva Distributors' Seminar-2014 at Ngpali, Myanmar from 19 to 25 October 2014. The team was headed by Dr. F H Ansarey, Executive Director, ACI Agribusiness. Mohammad Shaheen Shah, Business Manager and Dr. Moynul Islam, Product Manager of ACI Animal Health were in the team of delegates. Distributors from other Countries of Ceva APAC region like Pakistan, Sri Lanka, Myanmar, and South Korea were present in this seminar. The team of delegates also met livestock officials and few company officials to explore export potentials for ACI Animal Health products in Myanmar.

Ceva Santé Animale is a global veterinary health company focused on the research, development, production and marketing of pharmaceutical products and vaccines for pets, livestock, swine and poultry. ACI Animal Health is the authorized distributor of Ceva products in Bangladesh.

Strategic Meeting with CATALYST & Post-harvest Management Training: ACI Cropex

On Saturday, 25 October 2014, ACI Cropex had a strategic meeting with CATALYST at ACI Center. The agenda of the meeting was about the upcoming opening of ACI certified fish shops in different parts of Dhaka city. Based on the outcomes of the meeting, ACI Cropex is hoping to open two certified fish shops in November 2014.

A training program on post-Harvest management of vegetables for the executives of ACI Cropex was held at ACI Center on Thursday, 23 October 2014. Mr. Md. Hasanul Haque (Panna), Advisor on farming initiation & harvesting, ACI Agribusiness was the key resource person of the training. The training program gave ACI Cropex executives a better understanding of the post-harvest management process for better outcomes of vegetable farming.

Tidbits of Colors & Joy at the intersection of ACI Agriculture Technology Fair

On Tuesday, 28 October 2014, ACI Center premises took a festive look due to 'ACI Agricultural Technology Fair 2014'. The fair was arranged by ACI Agribusiness focusing manifestation of high quality Agriculture ingredients and supreme Technology. Besides, the culture of our country's agro-based rural life was upheld through numerous efforts. A large crowd around the road show, a tea stall, a pharmacy shop, 'Baul Ashor' (Session of folklore songs), traditional Bangladeshi Pitha (Rice--cake) stall, mobile cart with Chotpoti-Fuchka (popular snacks) - all were similar to a typical village fair. All the colors & joy of the day met at the intersection of culture & technology. Here are few snapshots of the day.

Genetic History of Tomatoes Revealed by New Sequencing

An international team of researchers, led by the Chinese Academy of Agricultural Sciences in Beijing, is publishing in the journal Nature Genetics a brief genomic history of tomato breeding, based on sequencing of 360 varieties of the tomato plant.

The C.M. Rick Tomato Genetics Resource Center here at UC Davis played an important role in this study by providing seed of both cultivated tomato varieties and related wild species.

This study, which builds on the first tomato genome sequence completed just two years ago, shows in great detail how the processes of early domestication and modern breeding influenced the genetic makeup of cultivated tomatoes. (UC Davis researchers also led an effort to sequence the genome of a wild relative of the cultivated tomato.)

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

Credit: Image courtesy of University of California – Davis

Food, Fuel and more will be Produced in Sea Farms of Future

Meet the farm of the future, where common seaweed is being upgraded from an environmental problem to a valuable natural resource and raw material.

"The fact is that algae can absorb nitrogen from the water as effectively as a wastewater treatment plant," says Gröndahl, a KTH Royal Institute of Technology researcher and head of the Seafarm project, which converts algae into eco-friendly food, medicine, plastic and energy.

The excessive fertilisation (eutrophication) of our seas results in an over-production of algae, commonly known as seaweed. Bathing beaches become unusable on account of algae blooms and entire ecosystems can be threatened.

"But, in our research, we turn the argument on its head and see algae as a resource. We collect excess algae along the coasts and cultivate new algae out at sea," Gröndahl says.

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

Seaweed could become a major cash crop of the future.
Credit: TT News Bureau

Researchers Rally for Rice Science at IRC 2014

Around 1,500 individuals from 69 countries are gathered for the 4th International Rice Congress (IRC2014) at the Bangkok International Trade and Exhibition Centre (BITEC) in Thailand from October 27 to November 1, 2014. IRC is known as the "Olympics of rice science" because it is the largest gathering of individuals involved in rice science held every four years. This year's theme is "Rice for the World", focuses on the latest advances in rice research and technologies around the globe.

Robert Zeigler, Director General of the International Rice Research Institute (IRRI), delivered the keynote message during the opening ceremony of the Congress. "There is already profound impact for several million farmers worldwide who have adopted one of the first technologies of the second Green Revolution—flood-tolerant rice...Many of these farmers belong to the poorest of the poor who, for various reasons, did not benefit fully from the first Green Revolution in rice," he said. He added that the third Green Revolution of rice will be sometime around 2030, when farmers will be planting more robust C4 and nitrogen-fixing rice varieties, and more nutritious rice are available in the market for consumption. He stressed that these would not be possible without the help of young rice scientists in the fields and laboratories.

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

An innovative way to increase flower, seed and fruit production

A scientist from Universidad Politécnica de Madrid (UPM) has developed a method to enhance crop yield by the contact of roots, aerial parts or even the substratum of the plant fungus, 'Colletotrichum tofieldiae'.

A new method developed at the Centre for Plant Biotechnology and Genomics (CBGP UPM-INIA) has shown that, by the contact of a plant with a strain of the Colletotrichum tofieldiae microorganism previously isolated, this plant can increase the number, size or weight of its seeds, fruits and flower. This discovery has been protected by patent, and its implementation could lead to cost savings and to lower environmental impact since this fertilizing system represents an alternative to the mineral fertilizers used so far.

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

Petunias.
Credit: Image courtesy of Universidad Politécnica de Madrid

Mystery of cereal grain defense explained

Diverse plant communities are more successful and enable higher crop yields than pure monocultures, a European research team headed by ecologists from the University of Zurich has discovered. The scientists are convinced that the cultivation of crop mixtures in agriculture and forestry will play a key role in food safety in the future.

Although monocultures can be cultivated efficiently, they are anything but sustainable: environmental damage to soil and water caused by monoculture cultivation is becoming increasingly evident. Despite their disadvantages, however, monocultures remain the principal crop form and are regarded as the sole possibility of achieving higher yields in plant production -- quite wrongfully, finds Bernhard Schmid, an ecology professor at the University of Zurich, who advocates a novel form of agriculture and forestry. After all, a new study carried out by PhD student Debra Zuppinger Dingley reveals that in grassland plants the yields of diverse plant communities are larger than those of monocultures.

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

Backyard Minifarming: Plant Communities
(Source: www.neo-terra.org)

Automated imaging system looks underground to help improve crops

Plant scientists are working to improve important food crops such as rice, maize, and beans to meet the food needs of a growing world population. However, boosting crop output will require improving more than what can be seen of these plants above the ground. Root systems are essential to gathering water and nutrients, but understanding what's happening in these unseen parts of the plants has until now depended mostly on lab studies and subjective field measurements.

To address that need, researchers from the Georgia Institute of Technology and Penn State University have developed an automated imaging technique for measuring and analyzing the root systems of mature plants. The technique, believed to be the first of its kind, uses advanced computer technology to analyze photographs taken of root systems in the field. The imaging and software are designed to give scientists the statistical information they need to evaluate crop improvement efforts.

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

Researcher James Burridge of Penn State University determines root phenotypes manually and with a prototype of the imaging system.
Credit: Penn State

India to see its first fish hospital in 2015

India's first hospital to treat abnormalities and diseases in fish is set to come up in Kolkata by mid-2015.

T J Abraham, senior scientist, spearheading the project told news agency PTI that the work has already started on the project. He said that nearly 60-65 kinds of disease and abnormality were found in fish in India and the one reason why West Bengal slipped from the number one position in fish production was due to the fact that 10-20 per cent of them died of diseases.

The institute will not only help fish farmers increase yield by reducing the number of fish deaths, but will also ensure that people will consume healthy fish. The hospital will have 50 glass aquariums, 25 circular water tanks, each with a capacity of 500 litres, to admit and treat diseased fish.

(Source: Far Eastern Agriculture, www.fareasternagriculture.com)

(Image source: Gölin Doorneweerd/sxc.hu)

Drones to study rice in Philippines

The Philippines may use drones as monitoring instrument to help researchers gather accurate data and efficiently study rice.

Roger Barroga, leading the study on Future Rice Program in Philippine Rice Research Institute (PhilRice), said that a training programme on drone technology will be conducted following its recent introduction in October 2014. To be implemented next year, the training programme will highlight flight tutorials and application of the drone's features.

The technology features a high-definition camera, flight stabiliser and global positioning system (GPS) that allows users to programme its flight path. It can fly for eight to 10 minutes and can travel up to a maximum distance of two km.

(Source: Far Eastern Agriculture, www.fareasternagriculture.com)

Drone will help reduce cost in multi-location monitoring and trials.
(Image source: PhilRice)

Believe it or not!


Honey bees must tap two million flowers to make one pound of honey.


Bananas are most likely the first fruit ever to be grown on a Farm.


An acre of trees can remove about 13 tons of dust and gases every year from the surrounding Environment.


Cheese was first made over 4,000 years ago in Asia.


Wool is a natural fiber grown from sheep.

Calorie Chart

Fresh Fruits

Type	Quantity	Calories
Cow Milk	1 Cup	157
Beef	Approx 42 g	142
Full cook boiled eggs	One, big	79
Lamb shoulder, cooked with fat	63 g	220
Chicken leg (hip), with skin, grilled	85 g	223

Source: http://www.moh.gov.sa/

Agro Tips

If you are planning to use Boron Fertilizer for farming you may like to know a few things. This type of fertilizers provides necessary Boron for the crops. They help to grow & give bigger shape to fruits. You may apply 2-3 kg fertilizer per acre which may vary slightly based on the type of soil & crops produced. You can apply Boron Fertilizers to the soil while preparing for farming or in between the growth phase of crops.

***In order to get answer to any of your agriculture related queries, please email us at **biolife@aci-bd.com** or visit our Facebook page **www.facebook.com/aciagribusinesses.**

Sharing is Caring!

These pictures show the innovative use of plastic bottles in indoor or backyard farming which you can easily replicate. It also promotes environment-friendly reusing practices. Do you have anything similar to share?

Winner & Answer of the previous Word Game!!!

Fazle Sadain
Senior Product Executive

Ginger
Radish
Carrot
Turmeric
Potato
Onion
Garlic
Ginseng

L	X	G	L	T	Y	J	H	K	X	S	X
D	L	Q	T	Y	R	A	D	I	S	H	L
C	C	F	U	M	G	C	A	S	W	F	O
F	I	C	R	Z	N	A	N	W	T	Z	Q
S	J	X	M	D	G	R	R	P	B	J	B
S	H	N	E	V	K	R	T	L	H	K	L
O	E	Q	R	Z	J	O	Y	B	I	I	M
N	P	F	I	G	P	T	V	Y	Y	C	S
I	C	E	C	I	E	O	J	W	V	W	R
O	G	Q	Y	R	B	P	O	T	A	T	O
N	C	G	I	N	S	E	N	G	H	B	M
G	C	U	S	G	I	N	G	E	R	S	Z