

HPAI Vaccination at Poultry Hatchery – a promising way to control diseases

Vaccination is one of the control measure undertaken against highly pathogenic avian influenza (HPAI) in Bangladesh. However, HPAI is endemic to poultry markets in Bangladesh and have cocirculated since 2008. So a better understanding of HPAI vaccination coverage and efficacy can be proved beneficial for the poultry industry and stakeholders.

Recently, ACI Ltd and Cirad (French Agricultural Research Center for International Development) jointly conducted a study to better understand the HPAI vaccination coverage and efficacy, its outcomes and perspectives in different poultry production sectors. The study was done using a predictive immunity model based on network analysis of the poultry production system in Bangladesh. This innovative way to analyze the outcomes of different control scenario could help in further design of HPAI strategic management plan.

The outcomes were shared through a workshop titled “**Network modeling of poultry production and immunity levels: analysis and perspectives for vaccination strategy and control of HPAI in Bangladesh**” in Dhaka on 6 May 2015, jointly organized by ACI Limited, Cirad , and Ceva (France).

The study finds that vaccination is a complementary approach to bio-security. However, major changes are occurring in this field aiming at making vaccinations easier to apply, less expensive and more efficacious. This is why vaccination at the hatchery has recently gained such popularity and is developing quite fast among the poultry industry. In hatchery vaccinated flocks, percentage of protected flocks almost always reached 100%. Vaccination at the hatchery is a real improvement for prevention, and this is really promising way to better control diseases.

Dr. F H Ansarey
Executive Director
ACI Agribusiness



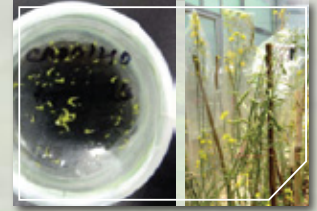
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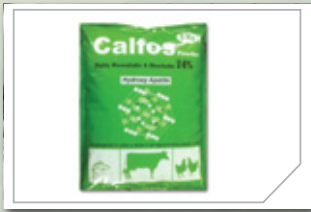
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Hybrid rapeseed: a new demand-driven technique for variety development

The breeding of rapeseed is still largely done using classical techniques and as breeding technologies improve, new methods have been incorporated into this process. Biotechnological methods, for example, microspore culture have shortened the breeding process by years. Work that was earlier carried out in the field can be now completed in greenhouses and laboratories. Through this advancement, it is possible to produce more than one generation per year and speed up the development of varieties with desired market traits e.g. high oil content, alternaria blight resistant, low erucic acid and glucosinolate. The demands of the market change quickly, and therefore, we require breeding techniques that have a quicker turnaround time.

The production of hybrids is the future of rapeseed variety development since open-pollinated varieties lose their yield potential in the long term. Hybrid rapeseed plants stand out because they can be

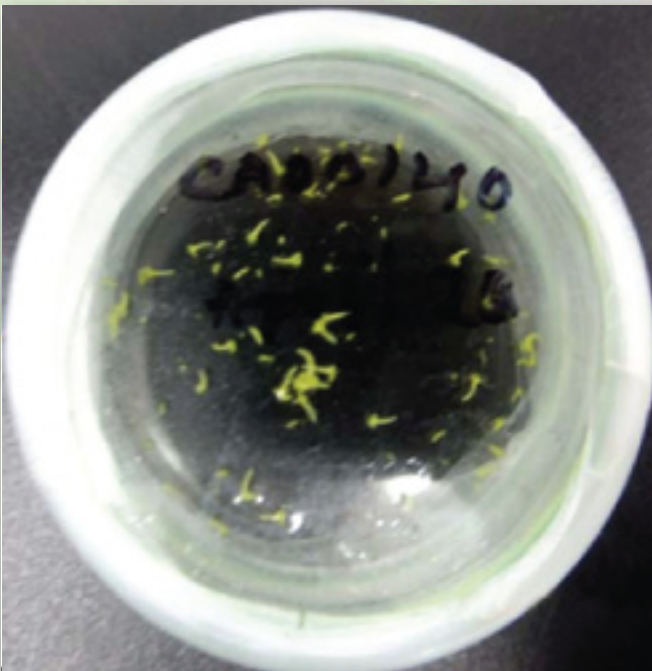
sown even at later dates, show higher adaptation to both biotic and abiotic stresses, and have high yield potential. These points help to secure stable and consistent yields for the farmers.

In the years to come, rapeseed breeding will produce new efficient hybrid varieties with high stable yields combined with high oil contents. The breeders may further focus on nitrogen fixation efficiency and drought tolerance.

The worldwide demand of rapeseed oil and meal is increasing and the production must also be increased. In Bangladesh, the potentiality of hybrid rapeseed is becoming demand driven to increase the acreage and production of rapeseed.

Prof. Lutfur Rahman

Advisor, ACI Agribusiness & Head of Advanced Seed Research & Biotech Centre



Calfos Powder – A True Bone Food

On 19 April 2015, ACI Animal Health Launched Calfos Powder – a True Bone Food. It contains calcium hydroxyapatite. Calcium hydroxyapatite is a valuable bone building nutrient. A number of studies have demonstrated the calcium hydroxyapatite compared to calcium carbonate is better at building and maintaining bone density. The Calcium hydroxyapatite group also had significantly higher levels of osteocalcin,

an important protein made by osteoblasts that is needed to attach calcium to form new bone. Each kg contains- Calcium Hydroxyapatite Matrix 100% [Calcium (Ca) 31.5 %, Phosphorus (as P) 16.5%, Bone Protein 10%]. Moreover, Calfos can be used for cattle, poultry and fish. It is manufactured by Sonac (The Netherlands). Calfos Powder is available in 5 kg pack.



Hozom® DS (Vet)

On 1 April 2015, ACI Animal Health launched Hozom® DS (Vet). It contains Cobalt Sulphate, a vital ingredient that ensures normal functioning of the rumen microflora. Hozom® DS (Vet) bolus contains Ferrous Sulphate, an excellent adjuvant for prompt and reliable result required for haemopoiesis. It also contains Thiamine Mononitrate which plays a basic role in intermediate carbohydrate metabolism.

bolus contains Vit. B12 required for tissue metabolism. Moreover, it contains Choline Bitartrate to stimulate the liver function. Each box of Hozom® DS (Vet) contains 10x4 boluses in blister.



Doxtin® Vet – Oral Powder

Doxtin® Vet powder is a combined preparation of Doxycycline Hydrochloride and Colistin Sulphate. Doxycycline belongs to the group of tetracycline and Colistin Sulphate belongs to the group of polymyxin. Inuicanon, Doxtin® Vet Powder is effective against various gm(+)ve & gm(-)ve bacteria such as E.Coli, Salmonella, Staphylococcus, Streptococcus, Bordetella and Campylobacter. Doxtin® Vet Powder is used to treat & prevent of the diseases like Salmonellosis, Colibacillosis, Infectious Coryza, Chronic Respiratory

Disease (CRD) etc. It is mainly active against Gastrointestinal tract & Respiratory tract infections. Doxtin® Vet Powder is slowly absorbed from the GIT which ensures longer action at GIT; thus develops its main action in the intestine against E.coli, Salmonella & Enterobacter. It is effective at low doses and prevents mixed infections, mortality of day old chicks. Doxtin® Vet Powder was launched on 19 April 2015 by ACI Animal Health. It is available in 100 gm pack.



SS-Bio - For better production & performance

SS-Bio is a combination of Synbiotics and Superbiotics for poultry. Each 100g of SS-Bio Contains Mannan endo-1,4- β Mannosidase 20000 Unit, Bacillus Subtilis 1.04 x 10⁹ CFU, Specific Bacteriophage 10 g, Excipient qs to 100 g. It improves body weight, production, immunity & litter quality of bird, increases intestinal absorption. It also reduces Salmonella,

Campylobacter, E.Coli and Staphylococcus shedding in the intestine while decreasing feed conversion ratio (FCR). Some special features are - no chance of resistance, no withdrawal time, no damage to beneficial bacteria, no residual effect, and can be used in pelleted feed. SS-Bio was launched on 19 April 2015 by ACI Animal Health. It is available in 100 gm pack.



Events and Activities

Motivation in Motion: Seed Field Days



Field day-Anokhi, Panchagarh (22 April 2015)



Field Day-Profit, Rajshahi (20 April 15)



Cauliflower-Maradona at Pabna



Rice-Sampad at Chuadanga



Pumpkin: Dhaka-1 at Thakurgaon



Evaluation Plot for Ridge Gourd varieties at IBSc



Evaluation Plot for Cucumber varieties at IBSc

Events and Activities

BARI & ACI Fertilizer – Collaboration meeting for New Field Technology

Bangladesh Agriculture Research Institute (BARI) is playing an important role for developing new technology in agriculture for a long time. ACI Fertilizer is also trying hard to introduce and promote new technology in the field. Considering a probable collaboration between the two parties to develop & promote new technology for the fields, a meeting was held on 6 April 2015. Both

BARI & ACI Fertilizer officials discussed the current status and future plans in the field of agricultural technology. A probable transfer of Hydro Phonic technology was also discussed in the meeting. Prof. Lutfur Rahman, Advisor, ACI Agribusiness; Mr. Bashir Ahmed, Business Manager and Mr. Sarder Ali Mortuza, GM, Sales of ACI Fertilizer were present in the meeting.



Farming Efficiently: Organic Fertilizer and Micro Nutrients for Better Yield

On 22 April 2015, ACI Fertilizer conducted field demonstrations on Boro Rice, Maize & Vegetables at Begumgonj, Noakhali. Under the supervision of Upazila Agriculture Office, the field day focused on the usage and advantages of organic fertilizer and micro nutrients. As part of the field demonstration, Upazila Agriculture Office organized a field day on Boro Rice at Abdullahpur, Kutubpur, Begumgonj. Mr. Borhan Uddin, Vice Chairman, Upazila Parishad, Begumgonj; Mr. Rezaul Karim

Bhuiyan, Upazilla Agriculture Officer, Begumgonj; Mr. Shakawat Ali & Jamal Uddin, SAAO and around 80 farmers attended the program. Mr. Asadur Rahman, Product Executive and Mr. Hafizur Rahman, Territory Manager, ACI Fertilizer answered different queries made by participating farmers. Field demonstration showed higher yield (280 Kg) when ACI organic fertilizers and micro nutrients are used, comparing the control plot (260 Kg).



Events and Activities

Trip to Thailand for ACI Fertilizer Sales Team

Senior staffs of the sales team of ACI Fertilizer went for a pleasure trip to Thailand from 21 to 26 April 2015. In 2014, ACI Fertilizer achieved a significant growth over last year while marketing Gypsum. Considering the performance of the team, BKG Group of Thailand, the manufacturer of Gypsum arranged the trip for the sales

team. There were 18 team members for the pleasure trip including Area Manager, Zonal Sales Manager, Regional Sales Manager and General Manager, Sales. A training session on effective Gypsum Marketing was also arranged by BKG Group during their visit to Thailand.



Balanced Fertilization Training for Local NGO Officials held in 3 Districts

ACI Fertilizer arranged different training programs for local NGO officials in Rajshahi, Jessore and Khulna during the month of April, 2015. The first training program was for the staffs of World Vision at Rajshahi on 13 April 2015. On 15 April 2015, the second training program with the staffs of Jagoroni Chakra at Jessore held and the third one was for the staffs of Solidaridad at Khulna on 16 April 2015. Mr. Sarder Ali Mortuza, GM, Sales; RSM, Rajshahi; RSM, Jessore and Area Managers were present in the training programs. The focus of

the discussions during the training was mainly on the importance of balanced fertilization in crop cultivation, the importance of balanced nutrition for human being and animal. Both fertilizer application methods and relevant product knowledge were discussed by the panels. The participants highly appreciated the organizers for arranging the programs and enriching their knowledge on balanced fertilization and nutrition for crops, humans, and animals.



Events and Activities

Rejoicing Bengali New Year with ACI Motors

On **Pohela Boisakh** (14 April 2015), ACI Motors celebrated the Bengali New Year with its customers, dealers, and well-wishers at Bogra. A

grand rally with customers and a road show with Tractor and Power Tiller were arranged at Bogra, as part of the celebration. Different

games for entertainment followed by a prize giving ceremony also increased the colors of festivity.



ASRBC becomes member of International Seed Testing Association

From 1 January 2015, Advanced Seed Research and Biotech Centre (ASRBC) of ACI Limited has become a member of the International Seed Testing Association (ISTA). ASRBC has fully equipped laboratories along with qualified scientists, one of whom has also become a member of ISTA. The resources available at the ASRBC can now be used to test seed health, germination %, pathogenicity, etc. Moreover, ASRBC can now provide such services which were previously offered only by the Seed Certification Agency of the country.



Follow-up: Low-cost Watering Cans thrived Homestead Gardens

Low-cost watering cans were distributed to 600 model women farmers from the ACI-IAP-SIDA project as an encouragement for carrying out homestead gardening in project areas of Barisal, Borguna and Patuakhali districts. The women farmers were also taught to grow 5 types of vegetables- Yard Long Bean, Indian Spinach, Okra, Amaranth and Kangkong; in rows, which is the proper agronomic practice. The added advantage of the watering cans has enabled proper irrigation, leading to a healthier and more thriving homestead gardens for the model women farmers and their families.



Events and Activities

Post Harvest Management Training on Maize held at Chuadanga

On Friday, 24 April 2015, a training on Post Harvest Management of Maize was organized by ACI Cropex. The training took place at Begumpur Village, Hijolgari, Chuadanga Sadar. Maize Farmers and Traders participated in the session and learned about different aspects of post-harvest management techniques of Maize. Mr. Md. Salim Miah, Asst. Manager (Purchase & Sales) and Mr. Asef Ibne Shamim, Executive, Marketing from ACI Cropex were present in the training session.



ACI Cropex exports Sesame Seed to China

ACI Cropex has exported quality sesame seed to China again. After successfully exporting to Taiwan, this recurring export to China has been a significant landmark in the journey of ACI Cropex. The overall customer satisfaction and the feedback of these seeds were very good. Sesame seed is a major export product of ACI Cropex.



Fish & Festivity: Boishakhi Hilsa from ACI Cropex

Marking the Bengali New Year's festival on 'Pohela Boishakh' (14 April 2015), ACI Cropex delivered formalin-free, branded Ilish/Hilsa fish to the customers ensuring the highest quality. Hilsa fish, a part and parcel of the traditional 'Boishakhi' meal, were directly collected by ACI Cropex team from Meghna River, Chandpur. Both institutional and household buyers enjoyed fresh Hilsa fish from ACI Cropex. Doorstep delivery was also available, as always.



Bacterial raincoat discovery paves way to better crop protection

Fresh insights into how bacteria protect themselves -- by forming a waterproof raincoat -- could help develop improved products to protect plants from disease. Researchers have discovered how communities of beneficial bacteria form a waterproof coating on the roots of plants, to protect them from microbes that could potentially cause plant disease.

Their insights could lead to ways to control this shield and improve its efficiency, which could help curb the risk of unwanted infections in agricultural or garden plants, the team says. Scientists at the Universities of Edinburgh and Dundee studied the protective film formed by the common soil bacterium *Bacillus subtilis*. They found it incorporates proteins that change shape as they reach the film surface. This exposes an impervious surface on the protein molecules, enabling them to slot together like a jigsaw puzzle, to protect bacteria underneath.

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



Developing Better Wheat Based on its 100 Year Yield Data

Researchers from Northwest Agricultural and Forestry University, China and The University of Western Australia collected and analyzed yield data from a total of 1,850 Chinese wheat varieties from 1920's to 2014 at three wheat producing regions in China. This was done to evaluate and understand the yield-traits related to wheat yield increases and how the traits evolved through the years. This will also be important in creating and developing future breeding strategies for wheat.

Based on their analysis, wheat grain yield increase is attributed to the increase in kernel weight and number of kernels per spike with a decrease in plant height and seed density. This finding is significant in wheat breeding since strategies can be made by focusing on these kernel traits to improve yield.

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



Study puts a price on the help nature provides to agriculture

A team of international scientists has shown that assigning a dollar value to the benefits nature provides agriculture improves the bottom line for farmers while protecting the environment. The study confirms that organic farming systems do a better job of capitalizing on nature's services.

Scientists from Australia, Denmark, New Zealand, the United Kingdom and the United States describe the research they conducted on organic and conventional farms to arrive at dollar values for natural processes that aid farming and that can substitute for costly fossil fuel-based inputs. The study appears in the journal PeerJ.

"By accounting for ecosystem services in agricultural systems and getting people to support the products from these systems around the world, we move stewardship of lands in a more sustainable direction, protecting future generations," said Washington State University soil scientist John Reganold, one of the study's authors.

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



Farmers rely on pollination services provided by bees for many crops including apples.
Photo Credit: Sylvia Kantor/WSU

Producing rubber from lettuce

Prickly lettuce, a common weed that has long vexed farmers, has potential as a new cash crop providing raw material for rubber production, according to Washington State University scientists.

Writing in the Journal of Agricultural and Food Chemistry, they describe regions in the plant's genetic code linked to rubber production. The findings open the way for breeding for desired traits and developing a new crop source for rubber in the Pacific Northwest.

"I think there's interest in developing a temperate-climate source of natural rubber," said Ian Burke, a weed scientist at WSU and a study author. "It would be really great if prickly lettuce could become one of those crops."

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



Scientists Tweak Poplar Tree Genes to Make them Grow Bigger, Quicker

Scientists at The University of Manchester have discovered a way to make poplar trees grow bigger and faster than usual, to increase supplies of renewable resources and help trees cope with the effects of climate change.

The team manipulated two genes, called PXY and CLE, which control the growth of a tree trunk. When over expressed, the trees grew twice as fast as normal and were taller, wider and had more leaves.

Research leader Prof. Simon Turner said, "This discovery paves the way for generating trees that grow more quickly and so will contribute to meeting the needs for increased plant biomass as a renewable source of biofuels, chemicals and materials while minimizing further CO₂ release into the atmosphere."

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



Indian Scientists Turn Coconut Oil into Biofuel

Scientists from the SCMS Institute of Bioscience and Biotechnology Research and Development and the SCMS School of Engineering and Technology in Kochi, India have approached the union government to commercialize their biofuel from coconut oil. They have used the biofuels to run their diesel pick-up truck for the past year.

"We purchased this brand new vehicle a year back. By now, it has done 20,000 km and has proved beyond doubt that coconut oil can replace diesel. We can provide this product at 0.40 Rupees a litre," said C. Mohankumar, the head of a team of six scientists. "The emission levels are lower than other forms of biodiesel, making it a very eco-friendly product too," he added.

They also mentioned five other by-products of their biofuels, including husk, coconut shells, coconut water, glycerol and "cake" which can be used as cattle feed. The study was published in the December 2014 issue of the journal 'Fuel'.

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



Asia milk demand to rise to 320mn tons by 2021, says FAO

Asia is expected to produce 320mn tons by 2021 to order meet its growing demand for milk and dairy products, said FAO in a report. According to the report, the demand for milk and its products in the region will reach almost 320mn tons by 2021. However, FAO assistant director-general Hiroyuki Konuma added, "The region will need to increase milk availability by another 50mn tons within this decade. Although domestic dairy production has responded to this growing demand, it continues to fall short of its targets and most countries in Asia are confronted with increasing dairy import bills."

FAO deputy regional representative Vili Fuavao added that nearly 80 per cent of milk in the Asia-Pacific region is produced by smallholders. "So improving their abilities to organize and thus, giving them greater bargaining power in the market place must be the core element of our work," he noted. He also stressed on increased participation of women in the dairy sector so that they become active participants in strategic decision-making.

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



Demand for dairy products in Asian countries has risen rapidly for years due to growing populations and changing tastes. (Photo Credit: CGIAR/Flickr)

New sustainable fish feed developed to ensure food security

A new sustainable fish feed ingredient FeedKind Protein can reduce the aquaculture industry's reliance on unsustainable fish stocks sourced from world's oceans, according to US-based life science manufacturer Calysta.

To be launched in the UK and Norway in 2018, FeedKind Protein is a high quality microbial protein that provides a cost-competitive alternative to conventional fishmeal.

The protein, produced with minimal land and water use, is non-GMO and approved in the EU for all fish and livestock species. CEO Alan Shaw said, "Calysta is committed to creating alternative ingredients and feeds that minimize impact on the environment and contribute to food security, based on a strong intellectual property platform"

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



FeedKind Protein can replace fishmeal and soy protein with a nutritious, naturally occurring protein. (Photo Credit: Leechonghyun/Pixabay)



Believe it or not!



The **banana** plant can grow as high as 20 feet tall!



Bees have been producing **honey** from flowering plants for at least 10 million years!



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

It takes approximately 1.4 gallons of milk to make 1 gallon of **ice cream**.

There are more than 7,000 varieties of **apples** grown in the world.



Calorie Chart

Fresh Fruits		
Food Type	Quantity	Calories (Kcals.)
Apple	242 gm	130
Banana	126 gm	110
Grapes	126 gm	90
Orange	154 gm	80
Pineapple	112 gm	50

Source: www.fda.gov

Agro Tips

For the proper care of crops, we have to ensure sufficient water. Though water is widely available in our country, we may still face drought. Whether we are working with our backyard garden or with our farmland, few water-saving practices can always come to use. Here are some water-conservation techniques:

1. **Use correct watering techniques:** Water early in the day to reduce evaporation loss. Water less frequently, but for longer lengths of time, to encourage deep root growth. Check hoses for leaks before watering plants, and position sprinklers so they water only plants -- not the road or house.
2. **Condition the soil:** Adding organic matter to clay and sandy soils will increase the penetrability of clay soils and the water-holding capacity of sandy soils.
3. **Mulch the soil surface:** This helps cut down on water loss due to evaporation. A two-inch layer of mulch or compost is recommended. Apply mulches to shrubs, trees, annuals, vegetable gardens and even containers.
4. **Collect compost for mulching:** Use food scraps, yard trimmings, and other organic waste to create a compost pile. Compost is a rich soil amendment that can help increase water retention, decrease erosion and replace chemical fertilizers.
5. **Use barrels to collect rainwater:** Use it to water plants.

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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.