



insecticides
(INDIA) LIMITED

हम कदम

TOGETHER IN EVERY WALK OF LIFE

Quarterly Newsletter

December 2020 | www.insecticidesindia.com

Year 1, Issue 1

हर कदम हम कदम

किसान बढ़ेगा तो देश बढ़ेगा

हमारी हमेशा से कोशिश रही है कि हम किसानों के साथ कंधे से कंधा मिलाकर काम कर सकें। उनकी मेहनत का उन्हें भरपूर फल मिल सके इसलिए हम निरंतर रिसर्च और किसानों के विकास के लिए खुद को और भी बेहतर बनाने के प्रयास में रहते हैं ताकि हमारे किसान आधुनिक टेक्नोलॉजी का लाभ उठा सकें। कृषि हम सबकी ज़िम्मेदारी है तो चलिए सब साथ मिलकर भारत को एक खाद्य प्रधान राष्ट्र बनाते हैं और एक सशक्त कल की ओर बढ़ते हैं।



insecticides
(INDIA) LIMITED

OUR NEW PHILOSOPHY

हर कदम हम कदम

The journey that started from **"Ab Shakti Aapke Haath Mein"** has reached a new destination **"Har Kadam Hum Kadam"**. Our initial endeavor to give farmers a product that they can completely rely on and get the maximum benefit to enhance farming was truly successful.

It has established us as the preferred choice when it comes to using the products for crop protection. It established a good and vital relationship with the farmer for whom we concerned for. But to grow further one must change its personality and distill its vision. So we are here with **"Har Kadam Hum Kadam"**.

It's based on our expertise with which we are always standing with our farmers in every step of farming:

- From Innovation to execution
- From International expertise to Indian relevance
- From effectiveness of the products to affordability
- From having a Pan India presence
- From making the product available for all crops to touching lives of more than 20 lakh farmers.

To establish this image in our consumer's mind, we come up with the new tagline **"Har Kadam, Hum Kadam"**. And we invite all our stakeholders, to come forward and take this endeavor to new heights.



THE POST-COVID ECONOMY OF AGROCHEMICAL INDUSTRY IN INDIA

A public healthcare emergency like the ongoing pandemic hurts every aspect of human life and economy cannot remain insulated. Agrochemicals also has been affected by the rapid spread of the contagious diseases that forced the economy to shut. The pandemic struck us at a time when the Rabi crops were being harvested and fear was rife that lockdown will delay harvesting due to shortage of labour. Even if it is harvested, taking them to the market place will be challenging. Fish and poultry suffered due to fear of being the carrier of the virus – poultry prices fell while fish prices became highly volatile. Having said all of that, economy has started going back to normal. For the agrochemical industry though, the long-term outlook is uncertain, for it cannot be said when the situation will improve with the arrival of a vaccine.

GOOD RAIN MEANS GOOD UPTAKE

The normal forecast of monsoon was a big boost for the agri sector after the widespread locust attack and difficulties with harvesting and marketing rabi crop due to lockdown. As of early July, kharif crop sowing is reportedly 88 per cent higher than the last year and timely onset of monsoon ensuring better water availability is facilitating crop acreages. Rice sowing covered 68.1 lakh hectares this year as compared to 49.2 lakh hectares last year, while oilseeds grew more than 3 times to 109.2 lakh hectares from last year's 33.6 lakh hectares. Pulses covered 36.8 lakh hectares, 4 times more than last year's 9.5 lakh hectares while coarse cereals coverage doubled to 70.7 lakh hectares. Whether the rains prove to be a shot in the arm for kharif crops is a matter will be evident with time, though some analysts suggest that it will help the domestic agriculture-inputs industry to enter a favorable phase of growth after lukewarm growth for the past three years and expect more than 20 per cent growth in the first quarter. Good rain also ensured ample water is available for the rabi crops.

PROPOSED BAN ON DOMESTIC USE WILL AFFECT UPTAKE

In may this year, the government

suddenly proposed ban on export and domestic use of 27 molecules, stating they are harmful for the local environment. All the 27 generic pesticides were used in India since 1970 without any risk or adverse impact to humans, animals and environment, and are registered by regulatory authority CIB&RC. The agrochemical industry has lodged a strong protest as the ban disregards FAO's advice that climate, crop grown, pests and diseases must guide the choice of pesticides for every country, due to which the ban on export has been lifted under conditions. The banned molecules produce more than 130 formulations used by the farmers for crop protection who are likely to face increased farm input cost. The generic pesticide formulations to be banned is priced at INR 350 to INR 500 per liter, a range that is economic and affordable to most of the farmers. These proposed to be banned pesticides comprise 30-40 per cent of the domestic market and the alternative available will be branded, readymade and expensive ones produced by the MNCs. With the ban if finally imposed, the imported alternatives will be priced in the range of INR 1,200 to INR 2,000 per liter – 4 to 5 times more costly than now. The ban, while at one hand increases cost for farmers, decimates the market for manufacturers, without any solid evidence and adequate opportunity to the industry to present their case.

SHORT SUPPLY OF TECHNICALS DUE TO POOR IMPORT

With the spread of coronavirus, initially China stopped the shipments of raw materials, crucial for the products developed here which created a gap, though the supply is regularized in the latter half of the Post Covid period. Indian agrochemical companies import an estimated 50 per cent of the raw material it needs. However, the R&D & domestic manufacturing capabilities at home is not robust enough to fill this gap. The Indian crop protection market is worth Rs 20,000 crore with 125 technical manufacturers and over 800 formulators

in 2017, with 15-20 big multinationals dominating the market. However, domestic manufacturing has not received the much-needed attention. Promoting domestic manufacturing, especially for raw materials as is proposed for the pharmaceutical sector, will take care of one of the biggest concerns of companies as the cost of raw material will be under control. The current model of production makes India a profitable manufacturer but not a producer. According to the data by Agriculture Science and Technology Indicators (ASTI), India currently spends 0.30 per cent of agriculture GDP on agricultural research, which is just half the share invested by China (0.62 per cent). India spends far less a percentage of its GDP for R&D expenditure as compared to much lower than the US, China, South Korea and Israel, as per the Economic Survey 2017-18. It is only imperative on part of the government to facilitate R&D to boost domestic manufacturing. Tax holidays and free land are some of the measures the government can take to help Indian agrochemical companies develop their manufacturing capabilities.



RAJESH AGGARWAL
 Managing Director

FROM THE DESK OF THE EDITOR

Editorial Board

- Shishir Chandra
AGM - Marcom, HO
- Dr. Mukesh Kumar
GM - R&D, Chopanki Unit
- Dr. G.P. Pandey
*Regional Manager-
Mkt. Development, HO*
- Shekhar Rana
Sr. Manager- HR, HO

Dear Readers,

Greetings from Insecticides(India)Family,

We believe you are all doing great with all precautions and care.

This pandemic of Covid 19 has led us to learn so many things, and one of the most important thing was we should not stop and keep going on with whatever possible ways we have.

ILL is in the noble business of serving the farmers and agriculture which can never stop as everything stopped in the first phase of lockdown but not the food supplies. Similarly, we would like to thank our employees, distributors, and dealers who have worked hard so that farmers can get the supplies of the crop protection products required by them in these tough times.

This e-newsletter is an initiative by ILL where we would like to share the happening in the company as well as in the industry so that everyone is informed and excited.

We believe that the success of this newsletter is depends on your participation, we look forward to your feedback, suggestions, and inputs to make this better and improved with every successive edition.

Do write to us at shishir@insecticidesindia.com, as your words will motivate us to bring the best out of us.

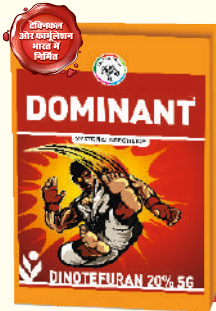
Stay Safe and take care.

Wish you all a happy reading.....

Editorial Board

NEW PRODUCT LAUNCHES DURING NEW NORMAL

Product launches has always been the big occasion for any Company. It's also an emotional occasion for lots of people who dedicatedly works throughout the process. But due to the new normal- Covid-19, we couldn't do the big launch ceremonies. We used the digital medium to launch many of our revolutionary products. Products that has the capability the change the fortune of the farmers.



DOMINANT

BPH is the prime insect that hampers the paddy crop. It grows faster and so it affects the paddy farm quite hugely. To dominate BPH, IIL introduced an innovative product called Dominant. It ends the lifecycle of BPH and reduces its rapid growth. Dominant was manufactured in India for the first time.



TADAANKI

TADAANKI is an advanced insecticide of OAT Agrico Co., Ltd., Japan for effective control of stem borer, leaf folder and nematodes in paddy. Tadaanki provides longer duration control than existing products, which makes it cost effective for the farmers.



MILSTIM MAX

Providing maximum benefits has always been the vision of IIL. But it was not possible with developing a product that can help the farm to regain its strength. After doing rigorous R&D, we developed a product called Milstim MAX, which is a Bio Fertilizer that helps land gain its fertility naturally. It gives a direct benefit to farmers in terms of increasing productivity.



SURYA ZINC+

Zinc is one of the most essential things required for the growth of the plant. That's why IIL launched SURYA ZINC+, a biological formulation that solubilizes in soil and makes zinc available for the plant. Thus the farmers get substantial and impressive growth and yield of crops.



MASTERSTROKE

The broad and narrow leaf weeds hugely affect the farming of cotton crop. So, to ease the farming of cotton, we did a masterstroke evolution and launched MASTERSTROKE. It's a revolutionary product that helps farmers to control broad leaf and narrow leaf weeds. It's one spray gives 25-day protection.



HAKAMA SUPER

To control narrow leaf weeds in crops like soyabean etc. and increase the productivity, IIL has introduced an advanced herbicide HAKAMA SUPER of Nissan Japan. It helps farmers to get rid of narrow-leaf weeds. It is highly effective and plays a vital role in enhancing productivity.



AVVAL

AVVAL is a post emergence selective herbicide for wheat. AVVAL controls phalaris, which is a key weed of wheat crop. AVVAL is very safe to crop. It is very safe for the present and subsequent crop and is very effective in all weather conditions.



MAHIR

MAHIR is a new age insecticide to control BPH in paddy crop. Its forte is to give the farmers the ultimate control over BPH. Mahir does it with great perfection. It is a fast and effective insecticide that paralyzes BPH and hamper its egg-laying ability, thus help the farmer to get effective control of BPH.

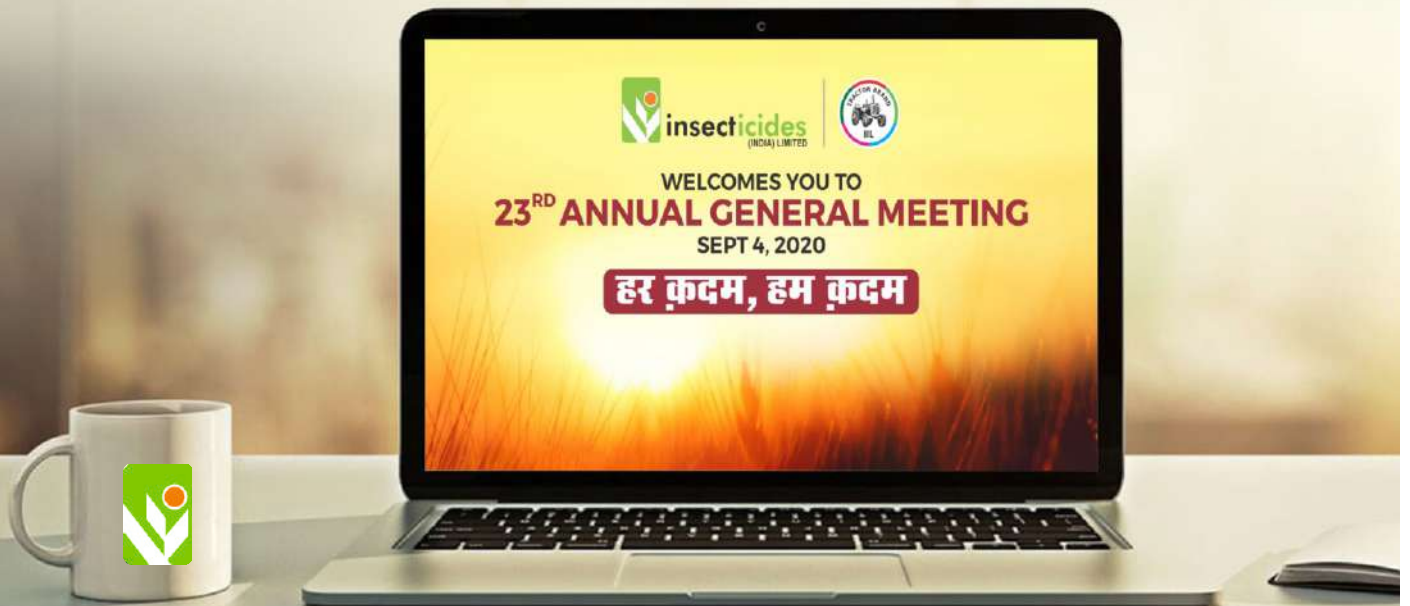


KK Pro

KK Pro is a Bio Enriched Organic Manure which improves the soil properties and enhances the crop yield. KK Pro is a new age biological product developed by the R&D team of IIL which is enriched with efficient microorganisms and essential plant nutrients which improves the soil quality. KK Pro is covered under FCO.

VIRTUAL AGM: ADAPTING TO THE NEW NORMAL

Annual General Meeting (AGM), is the most important event for any company. It is important occasion when all the shareholders comes together to discuss fiscal growth of the year and also about the strategy for the future. This year it was quite vital as the world was struggling from the Covid-19 situation. Doing business in these situation was a quite new experience for everyone of us as no one had ever planned for this. The world was stopped, but the good thing for us was that we were enlisted in the essential items list. It was a responsibility that we obeyed quite nicely. It was a good learning experience and we used it to organize the first Virtual AGM. We thank our shareholders & stakeholders for supporting us in these tough times.



RESPONSIBILITY TOWARDS THE SOCIETY

Partnering with the National Food Security Mission (NFSM) for awareness program for Farmers in AP & TELANGANA

IIL has taken up a CSR project under IIL Foundation to work for the farmers in the backward areas of the Andhra Pradesh and Telangana State, with National Food Security Mission (NFSM).

National Food Security Mission (NFSM) works in the field of farming to increase the production of rice, wheat, and pulses through area expansion and productivity enhancement, creating employment opportunities, restoring soil fertility and productivity.

So with this partnership, we will educate the farmers about the latest technique of farming and also make them aware of the latest crop protection products.

The first implementation stone of this project has laid at Darmavaram village in Echerla Mandal of Srikakulam District.

This program was attended by more than 50 farmers. The district received 30.3 percent deficient rainfall this year and a pilot project on the Direct Benefit Transfer (DBT) of free power subsidy for agricultural connections is likely to begin.

Explaining the vision behind this partnership, Mr. V K Garg, Vice President, Insecticides (India) Limited, says "We are very proud to be associated with the National Food Security Mission (NFSM). As a responsible corporate, we will work in the interest of farmers so that their input cost is minimized and productivity is increased. Paddy is a major crop of India and is the staple source of nourishment for people in eastern and coastal India. We are hopeful that we would be able to do justice to the trust poised by the government officials on our team."



Under National Food Security Mission, AP & Telangana Agriculture Department and IIL foundation jointly conducted farmer's education and support programme in the presence of mandal agriculture officer Sri Fathima and village Volunteers.



OUR ACHIEVEMENT

A patent for our effort to make revolutionary biological product

AWARENESS OF FARMERS- OUR RESPONSIBILITY

IIL also do the work to make our farmers aware regarding the judicious usage and importance of Insecticides. We always try to bust the myths about insecticides such as farmers are using them without proper knowledge.



Insecticides India Ltd. Mr. Rajesh Aggrawal, MD, IIL, जलम चरण
Insecticides India Ltd. का अध्यक्ष राजेश अग्रवाल जी (दायाले) को एक टीवी चैनल पर एक विशेष कार्यक्रम में आमंत्रित किया गया था, जहाँ उन्होंने किसानों को उचित रूप से कीटनाशकों का उपयोग करने के लिए सलाह दी।



Insecticides India Ltd. Mr. Rajesh Aggrawal, MD, IIL, R&D सेक्टर का रक्षक अधिकारी
श्री राजेश अग्रवाल, IIL के MD, ने एक टीवी कार्यक्रम में किसानों को उचित रूप से कीटनाशकों का उपयोग करने के लिए सलाह दी।



Insecticides India Ltd. Mr. Rajesh Aggrawal, MD, IIL, किसानों को उचित रूप से कीटनाशकों का उपयोग करने के लिए सलाह दे रहे हैं।
श्री राजेश अग्रवाल, IIL के MD, ने एक टीवी कार्यक्रम में किसानों को उचित रूप से कीटनाशकों का उपयोग करने के लिए सलाह दी।



Mr. Rajesh Aggrawal, MD, IIL describing lockdown impact on Agriculture

IIL IN MEDIA

TRIVIA

When & where was the first R & D Centre set up for IIL ? At Chopanki in 2004

EMPOWERING FARMERS

Farmer's Contact Programmes across India



CREATING A DIGITAL WORLD OF AWARENESS



USER REVIEWS



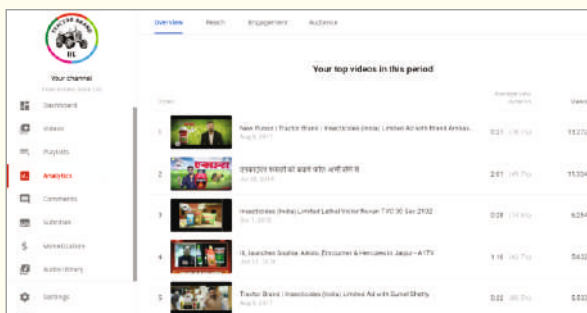
Product Promotion



Awareness/ Farmer Appreciation



Brand Leaders Interviews/Quotes



Naari Ka Krishi Roop



Gantara ka Jashan



HFHI

Awareness/ Farmer Appreciation



User Engagement



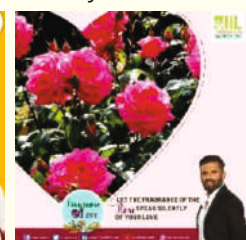
Topical Content



Smog Free Living



Fragrance of Love



insecticides jaroori hai

A REVOLUTIONARY INITIATIVE BY IIL FOUNDATION

IIL has always been known for the welfare of farmers, be it by providing the advanced research-based product at an affordable price or giving information to strengthen their farming techniques.

Adding to this, IIL Foundation has started a new digital initiative called Insecticides Jaroori Hai.

This social media platform is to thank the farmers for providing the basic necessity of life - food.

One of the important aim of this platform is to bust the myths regarding the importance of usage of insecticides judiciously.

Here we provide authentic information about farming, associated hurdles, and how a farmer can overcome those. We have reached out to the best minds in agriculture around the country and asked them to educate our farmers about crop diseases as well as the judicious use of insecticides. We provide all these because knowledge is the key to growth in life.

Come, join us and start conversations and discussions on the benefits of using judicious amount of insecticides to improve crop health and bring prosperity to the farmers.

Facebook Snapshot



10K Followers on Facebook • 5 Rating out of 5 given by our followers

Awareness / Farmer Appreciation



YouTube



राजेश अग्रवाल, MD, IIL: R&D सेंटर का बृहत्तर कृषि और किसान...
47 views • 8 months ago



Ban hone ki tayari main agrochemicals ka kisaano...
21K views • 6 months ago



डा. अनुपमा सिंह, कृषि रसायन विभाग - इसेक्टिसाइड्स का...
26K views • 9 months ago



फसल की शोले: जय, वीरू, गब्बर और इन्सेक्टिसाइड्स
25K views • 7 months ago

YOU CAN
VISIT US

- <https://insecticidesjaroorihai.com/>
- <https://twitter.com/InsecticidesJH>
- https://www.youtube.com/channel/UCu7EddC7--uBlwdfaYFo95w?view_as=subscriber
- https://www.facebook.com/InsecticidesJarooriHai/?modal=admin_todo_tour
- <https://www.instagram.com/insecticidesjaroori/>





HR Corner

The Corner of your Success...

newINITIATIVES @ HR



Group Medical Insurance - Understanding the need of medical exigencies and mitigate the hardship, management decided to change the medical reimbursement scheme to comprehensive medical Insurance policy for its employees and their family.



Keka - IIL is not leaving any stone unturned to adopt cutting edge technology when it comes to simplify the process and help the team members. One such initiative is Keka Android & IOS Mobile Application which has seamlessly connected the workforce across the board on one platform.



NPS - We understand financial health is equally important for all in the organisation. An initiative which not only help employees to save on Tax but also plan the retirement with dignity. IIL has registered itself under NPS to provide this benefit to interested members acrossboard.

News @ IIL

Quality Control & Assurance Labs at our Dehej Plant in Gujarat have been accredited with NABL certification.



Mata Jagran at Samba formulation plant in the auspicious Navratri this year.



Safety training workshops at Dahej technical plant



Bhumi Pujan for the new IIL Headquarters building in Delhi



Brown field expansion at our Chopanki plant.



Participation at VOICE, an Environment initiative



Operations started at new Export Oriented Unit in SEZ (Special Economic Zone), Gujarat.





I am working with IIL since November 2018. This is my first work experience and beginning of my working career with IIL has been a wise decision. In these 2 years I have gained a good knowledge about agrochemicals and it's manufacturing and exports. As I handle the Middle East territory for regulatory affairs, I got a big exposure on the regulatory related subject. Being a fresher, I was given good opportunity to travel and attend international exhibitions and meet & develop customers. I have improved my communication skills and confidence level in interacting with people.

PINAK BAM
 Officer - Regulatory Affairs



I joined Insecticides (India) Limited as a Fresher. IIL offered me a great opportunity at entry-level position with a challenging profile and responsibility. Atmosphere in IIL is friendly & understanding, with knowledgeable team members. Leadership team is great too; they know all their employees on a first name basis. I am working in IIL since two and half years and every day offers a new experience. Work culture in IIL offers good opportunities to develop leadership skills. I feel grateful to work in such an esteemed organisation.

PRAKASH JOSHI
 Executive - Regulatory Affairs



It has been a great experience with IIL family as I have completed one year on 30th September this year. I have explored and learnt new methods of costing and managing procurement under guidance of Mr. Sunil Wason. I believe that the same continues to a great extent.

RISHAB CHATURVEDI
 Executive - Purchase



I feel proud to work with Insecticides (India) Ltd. as it well cultured and ethical company. Insecticides (India) Ltd. have good quality of products and have well developed Distributors & Dealers which facilitate to do the Business with all possible support. So that we can give best service to our farmers for their best satisfaction & quality production.

BHUSHAN DILIP BORSE
 Officer - Sales, Maharashtra

Journey of FAW to Maize in India

MAIZE CULTIVATION IN INDIA

The maize is cultivated throughout the year in all states of the country for various purposes including grain, fodder, green cobs, sweet corn, baby corn, popcorn in peri-urban areas. The predominant maize growing states that contributes more than 80 % of the total maize production is Andhra Pradesh (20.9 %),



Karnataka (16.5 %), Rajasthan (9.9 %), Maharashtra (9.1 %), Bihar (8.9 %), Uttar Pradesh (6.1 %), Madhya Pradesh (5.7 %), Himachal Pradesh (4.4 %). Apart from these states maize is also grown in Jammu and Kashmir and North-Eastern states. Hence, the maize has emerged as important crop in the non-traditional regions i.e. peninsular India as the state like Andhra Pradesh which ranks 5th in area (0.79 m ha) has recorded the highest production (4.14 m t) and productivity (5.26 t ha⁻¹) in the country although the productivity in some of the districts of Andhra Pradesh is more or equal to the USA.

Fall armyworm, destroyer of maize farms, causes concern in India after ravaging cornfields of sub-Saharan Africa, the fall armyworm arrived in India in 2018. The pest infestation has already spread to most parts of the subcontinent and has been reported from maize farms in 20 states.

A native of America, the fall armyworm has spread through trade routes to Africa and Asia. There is no single solution to get rid of this voracious eater of maize plants, and scientists suggest a multi-pronged approach depending on geographical location and extent of the infestation.

Maize monoculture and overuse of pesticides to control that increase resistance have turned the fall armyworm into a serious pest. A shift towards agro-ecological approaches like organic and natural farming, and multiple cropping systems could help in managing the outbreak.

Maize farmers in many parts of Karnataka were taken by surprise in July last year when an unknown caterpillar attacked their crop. It didn't take scientists long to identify the new pest. By the second week of July, researchers from the National Bureau of Agricultural Insect Resources (NBAIR), an institute under the Indian Council for Agricultural Research, said the new pest was the Fall Army Worm (FAW).

Spotted in a maize field in Chikkaballapur, some 60 km from state capital Bangalore, the appearance of FAW in India is a cause for serious concern. Native to tropical and subtropical regions of the Americas, the dreaded caterpillar appeared and spread rapidly in Africa in 2016, and has since then devastated millions of hectares of maize crop in all parts of sub-Saharan Africa.

And sure enough, the worm spread very fast through the maize fields of India as well. In a matter of months, more than 14 states in the country reported the infestation last year, seriously compromising the corn harvest. The infestation has since spread even wider this year to 20 states, with the northeastern parts of the country the worst affected.

The caterpillar stage of a moth, the FAW (*Spodoptera frugiperda*) is a voracious eater of maize plants and has been termed as an invasive species by scientists. It's not a picky eater though. Besides corn, it likes to feed on the leaves and stems of more than 350 plant species, including rice, sorghum, sugarcane and wheat.

An adult female moth can lay up to a thousand eggs in her lifetime. They are also terrific fliers and can travel up to 100 km in a single night.

The moth stage of fall armyworm on a maize plant. The pest infestation has been reported from maize farms in 20 states in India.

Fast spread

The spread of FAW through the Indian subcontinent has been particularly fast. In 2019, the pest has spread as far as Mizoram in the northeast, Uttar Pradesh in the north, Gujarat in the west, Chhattisgarh in central India, and several states in the south. This year, the biggest victims so far have been farmers in the northeastern states, where a cumulative of 10,772 hectares of maize crop has been affected. The pestilence has been reported from 20 states in India.

Scientists are not surprised at the fast transmission of FAW. "We have already seen in Africa that the infestation spread from one country, Nigeria, to almost half of the continent in a matter of two years (2016-2018)," said Malvika Chaudhry, regional coordinator, Plantwise Asia, Centre for Agriculture and Bioscience International (CABI).

The northeastern states with their "high humidity and moderately high temperatures" are suitable for the spread of FAW. Its metabolic rate is well supported in these conditions, sometimes even leading to "intensification of infestation," said Chaudhry. It means that the pest is able to complete its lifecycle in a shorter period of time, resulting in more pests, more quickly.

Farmers and scientists are now fighting to contain the infestation. Maize is India's third most important cereal crop after rice and wheat. In 2016, 25.9 million metric tons of maize was produced in India. In 2017, that number rose to 28.7 million tons. In 2018, however, production fell by 3.2% to 27.8 million tons. It is expected that the net production



will decline further in 2019 due to the pest attack. Fall armyworm (*Spodoptera frugiperda*) larva on maize cob. The larvae, which are marked with a distinct inverted "Y" on the front of the head, feed on a wide variety of plants.

Cascading effect

Although corn is not a staple in India, it serves an important role as feed for poultry. The growth in the poultry industry has resulted in a concomitant increase in the area cultivated under maize since the turn of the millennium. The decrease in maize production thus has a cascading effect on the poultry industry.

Earlier in August, poultry farmers in Karnataka and Maharashtra urged Narendra Singh Tomar, India's farm minister, to urgently import maize to meet a shortfall. Due to the deficit, maize prices have shot up, resulting in an increase in production cost for chicken and eggs.

Its not just the feed and starch industries that are feeling the heat. Maize farmer's maize are too facing additional challenges in continuing to grow the crop. They've had to endure crop losses and bear the additional cost of rescuing their crop from FAW and preventing further infestation.

"The input cost of growing maize has gone up," said Bhagirath Choudhary, founder-director of South Asia Biotechnology Centre (SABC), a New Delhi-based scientific organization. In addition to the usual input cost, farmers have to spend on pheromone traps, safety kits, botanical and biological control methods and more pesticides.

In addition to their price, most of these items attract high taxes to the tune of 18 percent. Only botanical and biological controls are taxed at five to 12 percent. For farmers, especially smallholders, these costs are punitive. "The SABC has submitted a request to the Union Minister of Finance, Nirmala Sitharaman, to either completely exempt GST (Goods and Services Tax), or reduce it to the lowest slab on these items," said Choudhary.



Worryingly, FAW seems to have spread to crops other than maize as well. For example, scientists noticed FAW infestation on sorghum and bajra (millet) in the fields of an agricultural research station at Ananthapuram in Andhra Pradesh in October 2018. The researchers noted that the pest was gradually spreading to other millets grown in Ananthapuram district.

In another report, researchers from Maharashtra noted FAW's presence in sugarcane and sorghum. A statement by the Ministry of Agriculture and Farmer Welfare on June 25 confirmed FAW infestation on sorghum and ragi (finger millet). The only consolation of sorts is that the spread in these crops has not been as rapid as than in corn.

Fall armyworm larvae feeding on a maize crop. Maize monoculture and overuse of pesticides that increase resistance have turned the fall armyworm into a serious pest.

Compiled by: **Dr. G.P. Pandey**
 Regional Manager (Market Development)

Stopping FAW's march

In 2018, when the pest attack first started, most farmers were unfamiliar with FAW. On Plantix, an AI-based farmer assistance mobile application where farmers can ask questions, farmers in 2018 were mostly asking to identify the pest, according to Sairekha Kadirimangalam, who works for Plantix in Hyderabad. However, as FAW starting spreading in India, the nature of queries changed. Maize farmers are now looking for solutions to stop the pest from damaging the crop, Kadirimangalam said.

There is no silver bullet to stop FAW in its tracks. A good monitoring system and farmer awareness about the pest are the first steps, said Chaudhry. "Sometimes, when confronted with the pest suddenly, farmers tend to panic and spray their fields with an array of chemicals," she said. "This panic response is not just ineffective but also leads to broad-spectrum resistance in the pest, and should be avoided."

"The first thing they (farmers) should do is to contact the nearest Krishi Vigyan Kendra (agricultural extension center) or state department's agriculture officials," said A.N. Shylesha, principal scientist, Entomology, NBAIR. Based on geography and extent of infestation, ICAR recommends a variety of solutions, which include mechanical, biological and chemical measures. For example, the infestation in its early stages can be controlled by using bio-control agents like *Trichogramma* and *Telenomus*, and providing good nutrition to the plants. It is only when the infestation is severe that chemicals are recommended.

As FAW continues its march across India and other Asian countries, the need for effective protective measures will only grow stronger. "Increasing monoculture of maize around the year and wrong pest management practices with excessive dependence on chemical pesticides, which increased the resistance in the insect to pesticides, have contributed to FAW becoming a serious pest," said G.V. Ramanjaneyulu, executive director of the Centre for Sustainable Agriculture, which works with smallholder farmers. "Any pest is always a function of practices followed and local weather conditions. Therefore, a shift towards agro-ecological approaches like non-pesticidal management, organic or natural farming, and multiple cropping systems are the ways to manage such pest outbreaks."