



# ALLIANCE FOR SUSTAINABLE & HOLISTIC AGRICULTURE (ASHA)

**Food • Farmers • Freedom**

To:

August 6<sup>th</sup> 2020

Joint Secretary (Plant Protection),  
Ministry of Agriculture and Farmers Welfare,  
Department of Agriculture, Cooperation and Farmers Welfare,  
Krishi Bhawan,  
New Delhi-110 001.

Dear Sir,

**Subject: Feedback on S.O. 1512(E) Draft Order – Banning of Insecticides Order, 2020**

Greetings! We are providing our feedback from ASHA (Alliance for Sustainable & Holistic Agriculture) on S.O. 1512(E) Draft Order Notification called “Banning of Insecticides Order, 2020” which was published on 18<sup>th</sup> May 2020 by the Department of Agriculture, Cooperation and Farmers’ Welfare of the Ministry of Agriculture and Farmers’ Welfare, Government of India. ASHA is a nation-wide network of farmers’, scientists’, environmental and consumer organizations and concerned citizens of India.

We welcome the draft order that proposes the banning of 27 insecticides included in the notification, which is actually a long-overdue measure from the government. As the notification itself notes, the Expert Committee headed by Dr Anupam Verma (who is incidentally not a health or environmental expert) was set up in 2013. Their report was first considered by the Registration Committee in the Central Insecticides Board & Registration Committee (CIBRC) way back in December 2015. It was only in October 2016 that the Department of Agriculture, Cooperation and Farmers’ Welfare issued an order conveying the approval for implementation of the recommendations of the Registration Committee. Further, a notification (Notification number S.O.4212(E)) like the current one of S.O.1512(E) was put out by the Ministry only on 15<sup>th</sup> December 2016. And, it was only on August 9<sup>th</sup> 2018 that the “Pesticides (Prohibition) Order 2018 was finally issued whereby 11 pesticides were banned with immediate effect (Benomyl, Carbaryl, Diazinon, Fenarimol, Fenthion, Linuron, MEMC, Methyl Parathion, Sodium Cyanide, Thiometon and Tridemorph), one pesticide was banned except for use in wheat (Trifluralin) and 6 other pesticides were ordered to be phased out for use by December 2020 (Alachlor, Dichlorvos, Phorate, Phosphamidon, Triazophos, and Trichlorfon) through this August 2018 prohibition order.

The government’s slow actions in implementing the recommendations of an expert committee that it set up itself – giving a full five years from December 2015 till December 2020 for the phasing out for the last set of 6 pesticides for instance – is clearly an indication of its working at the behest of the pesticides industry, and not in favour of sustainable development, or environment or farmers welfare or citizen health.

It was the Anupam Varma Committee that asked for a review of 27 pesticides in 2018, after completion of recommended studies for the toxic chemicals that are listed in the current draft Order. At that time itself (2016), we had expressed our concern at the industry being asked to present data from studies that it was asked to take up. This is the procedure at the time of registration in any case, where despite the obvious conflict of interest, neither independent data generation nor independent analysis of data submitted is taken

up by the regulators. To repeat the same procedure during reviews, of asking industry to generate data, does not make much sense.

Nonetheless, we welcome the government's proposal to ban these 27 pesticides and we hope that no delay tactics deployed by the industry will come in the way of prompt ban on these 27 deadly pesticides.

Given that the Government of India took quite long to actually effect a ban on 12 pesticides in the past from the time the draft order was notified, we urge that the Centre actively facilitate the suspension of licensing for sales of these pesticides in all those states where the state governments are keen on putting into place an end to the usage of these deadly pesticides.

While this draft Order refers to only 27 bannable insecticides, we call upon the Ministry of Agriculture and Government of India to look at another 70+ pesticides at least which need to be banned in India. A complete list of pesticides banned in one or more countries elsewhere including many not necessarily considered by Anupam Verma Committee is attached to this letter as Annexure 1. Within such a list of bannable pesticides are pesticides such as Paraquat.

Some issues that we would like to raise with regard to speedy implementation of decisions related to review and prohibition/ban of bannable pesticides in India and about the 27 pesticides for which a ban is now proposed are given below.

### **Pesticide Poisoning Deaths & Hospitalisations**

Such deaths and hospitalisations related to pesticides can be intentional, occupational and accidental.

Our repeated fact-finding efforts over many years show very clearly that certain pesticides like Monocrotophos, Acephate, Carbendazim, Mancozeb, Quinalphos, Chlorpyrifos, Methomyl etc., are repeatedly implicated in such incidents of occupational poisoning. A ban on these pesticides will certainly help reduce such pesticide poisoning deaths and hospitalisations. The right to life of farm workers and farmers struggling to make a day's living by spraying pesticides will be thereby protected.

21 of the proposed pesticides are in a list of Pesticide Action Network's Highly Hazardous Pesticides (HHPs) which synchronizes various supranational and other international bodies lists of highly hazardous pesticides.

Further, studies have shown that banning of specific HHPs in Sri Lanka, Bangladesh, China and South Korea led to reduction in pesticide-related suicides as well. A recent persuasive paper clearly argues that pesticides such as monocrotophos, quinalphos, methomyl, dimethoate etc., (in addition to other pesticides like paraquat) which are listed as HHPs (Highly Hazardous Pesticides) which also feature in the proposed ban, need to be banned.

While systematic data collection has not been possible in India about accidental deaths in India due to pesticide poisoning, some well-publicised instances like the deaths of 23 children in the mid-day meal poisoning instance in Chhapra in Bihar had implicated Monocrotophos as the culprit chemical, for instance. Or the Chamarajnagar poisoning case in Karnataka in 2018 where monocrotophos was again implicated leading to the death of 15 devotees. In 2009, World Health Organisation called for India to ban monocrotophos because of its extreme toxicity too. In a news report - Cheminova, a unit of Auriga Industries had said that "We decided to phase out monocrotophos because with many alternative products, we could not see any reason to have such a toxic product in a country like India." It was one of the companies which opposed ban on monocrotophos in 2004.

Other than 3 WHO Class Ib pesticides and 13 Class II pesticides in this list of 27 pesticides, India continues with 9 more Class Ia and Ib pesticides – Bromadiolone, Abamectin, Coumatetralyl, Cyfluthrin, Beta-Cyfluthrin, Edifenphos, Oxydemeton-methyl, Propetamphos and Zinc Phosphide.

*What the government is proposing to do in terms of banning 27 deadly pesticides is an important step to uphold the right to life of all people being affected by intentional, occupational and accidental pesticide poisonings.*

### **Chronic Health Impacts**

It is not just acute health impacts but numerous chronic health impacts that the government should be concerned about too. 3 of the 27 are endocrine disrupting, 3 are reproductive toxicants, 6 are probable/likely carcinogens as per US EPA and 1 is a probable human carcinogen in WHO classification.

An investigation in 2016 found that 90.04% patients out of 432 people were farmers, orchard inhabitants in Kashmir were exposed to chlorpyrifos, dimethoate, mancozeb and captan for more than 10-20 years.

Within chronic health impacts are issues like neurotoxicity of pesticides making exposed persons depressed and suicidal and resorting to killing themselves using those very pesticides, and of immunity system getting affected which will have its own implications in pandemics like the current covid-19 pandemic.

### **Impact on non-target organisms**

Malathion, chlorpyrifos, monocrotophos etc., are implicated in various wildlife poisonings across the country as per various media reports and experts. Further, the eco-toxicity of several of these pesticides in terms of their harmful impacts on bees, earthworms, fish etc., has already been noted.

In 2013, it was also found how poachers were using carbofuran to kill tigers and leopards in Uttarakhand.

### **Impact on Exports and India's Trade Security**

The ban being proposed will help India in tackling rejections in our crop export consignments due to residues and improve our trade security. Presence of pesticide residues has led to rejection of hundreds of our exports in countries around the world in Asia, North America and Europe affecting businesses and farmers. For instance rejection of such exports was the main reason why the basmati rice export price reduced from Rs 3700 per quintal in 2018 to Rs 2700 per quintal in 2019. As per APEDA data, Basmati rice export reduced from Rs 32,804 crore in 2018-19 by nearly Rs 1700 crore to Rs 31,026 crore in 2019-20 with a major factor being export reductions in EU, Saudi Arabia due to pesticide residues. Basmati rice is the largest exported commodity in India's agricultural export basket. This not only affects the specified exports and causes revenue loss but also leads to a reputational loss with equally significant effects as well. Earlier this year, Indian government has recently said that due to EU's practice of low MRL limits, major barriers are created for exports of rice, peanuts, chillies, spices, tea, fruits, vegetables and sea food.

Some of the pesticides implicated in such export consignment rejections by other countries include acephate, carbofuran, thiophanate-methyl, chlorpyrifos, carbendazim, dicofol, dimethoate, malathion, methomyl, monocrotophos, quinalphos, methomyl, thiodicarb etc. which feature in the list of 27 pesticides to be banned. We therefore welcome the notification for this reason too.

### **State Governments Desirous of Ban as well**

State governments like Kerala, Andhra Pradesh, Punjab, Maharashtra, Sikkim etc., have already taken proactive interventions in trying to prohibit the use of several of these pesticides.

Kerala in 2011 stopped sales of Atrazine, Carbofuran and Monocrotophos amongst 11 others. AP had recommended to the Centre a ban on pesticides like Benfuracarb, Deltamethrin, Dinocap, Thiodicarb and Thiophanate-Methyl amongst several others. Maharashtra had recommended a ban on Monocrotophos and Acephate amongst others. Punjab, in January 2018, tried to stop sales of pesticides like Benfuracarb, Dicofol, Methomyl, Monocrotophos and Thiophanate Methyl in an order that sought to ban 20 pesticides. Monocrotophos was briefly banned by Adilabad district collector in 2019 as well. In 2014 under Sikkim Agricultural, Horticultural Input and Livestock Regulatory Feed Act Sikkim banned all inorganic agricultural inputs including highly hazardous pesticides and pesticides were withdrawn in Sikkim in 2016.

However, a serious statutory shortcoming in our current regulatory regime restricts state governments (and district administration) from banning pesticides, and they can only resort to stopping of licensing of sales. The proposed ban will therefore uphold a federal cooperation spirit.

### **Chemical residues in our food**

While the central sector scheme of the Ministry of Agriculture and Farmers' Welfare called MPRNL (Monitoring of Pesticide Residues at National Level) routinely reports a certain level of contamination of India's food samples tested in the project, there are numerous independent studies that indicate a much higher level of contamination of our foods with pesticide residues. Such studies emerge not just from civil society groups but several public sector research bodies and even from judicial institutions' *suo motu* action at times.

Some of the pesticides listed in the current notification feature in such reports too – chlorpyrifos, for example; deltamethrin, malathion, acephate, malathion, pendimethalin, quinalphos, dicofol, monocrotophos etc., for example, and this is one more reason why we welcome this ban order.

While we do not consider MRLs to be indicators of food safety, [MRLs also have not been fully fixed](#) for the pesticides listed for ban now. 47 food related uses of these pesticides have been permitted by the pesticide regulators without MRLs being fixed by the food safety regulators. Carbofuran, Chlorpyrifos, Dimethoate, Malathion, Monocrotophos, Quinalphos, Thiophanate-methyl, Thiram and Ziram do not have all MRLs determined.

### **Pursuing Sustainable Development Goals and Compliance with international commitments made by India**

Goal 3 (Good Health and Well-being), Goal 12 (Responsible Consumption and Production), Goal 14 (Life Below Water), and Goal 15 (Life on Land) all require governments and businesses to get more responsible about toxic chemicals in our food, farming and environment. The proposed ban on 27 pesticides takes India closer to its commitments to SDGs, and therefore, is welcomed by us.

### **Pesticide Biosafety Data**

Data from the industry must not be used for the pesticides review as this would present an obvious conflict of interest. We are also familiar with the delay tactics deployed by the industry as has happened with numerous pesticides in the past. Even in the case of the current draft order, the industry is trying to make the whole issue as that related to data submission, whereas existing data is enough to take decisive action. For future, we propose that funds collected from pesticide industry on their turnover must be used by the government to conduct independent, transparent and long-term research studies on a continuous basis on the pesticides for which additional data is sought. Data from the studies must be put out in public domain on a government website in a searchable format. All the insecticides must be banned until such studies are completed – as the focus must be on biosafety. Further, industry-linked individuals must not be allowed to be involved in these studies and reviews, while public participation must be sought in general.

Meanwhile, if in the name of harmonization with regulation in other countries like OECD countries, India is [willing to accept \(toxicology\) data generated in other countries](#) through arrangements like Mutual Acceptance of Data (MAD), we should also accept data generated in other countries for taking prohibition-related decisions.

### **Scare-mongering in the name of impacts on Yields**

It is often argued that production and productivity will get affected without the use of pesticides like the ones listed in the latest notification. This was argued for the August 2018 ban order too. However, there is no evidence whatsoever that these pesticides are needed for our productivity to be improved or sustained. No declines are seen in India specifically related to the earlier set of pesticides that were banned or in states that have taken policy decisions on certain deadly chemicals or an overall non-chemical approach. In fact, for most crops, evidence is to the contrary - production and yields are increasing.

These insecticides are banned in several countries including China and those in European Union – despite the bans, these countries have yields that are higher than India's for crops for which these pesticides are registered and used which illustrates that farming can indeed be done without these pesticides.

The post-modern science of pest management has numerous alternative practices and products through which crop pest management can be taken up successfully without impacting yields and this is well-documented already.

### **Alternative pest management science is not just safer but also far more affordable**

The industry is heard arguing that alternatives to the about-to-be-banned chemicals are expensive for farmers. They say so because they are only looking at chemical molecules that the industry can manufacture and sell as alternatives. The real alternatives based in agro-ecological pest management do not cost much and farmers will find it very affordable and even free of cost in many cases if they use Nature's processes and products for pest management.

It is also seen that the cost of plant protection inputs within the overall paid out costs in agriculture for different crops ranges from 0.9% in sugarcane to 8.4% in cotton (average across 2004-05 to 2016-17 as per MoAFW's cost of cultivation data). Ironically, it is in cotton for which Bt cotton was touted as a solution for the chemical pesticide usage intensity problem that pesticides continue to constitute a higher proportion of paid-out costs. Given the above, the industry's argument on behalf of farmers is untenable. Meanwhile, this is indeed a great opportunity in which to move India's farming towards an agro-ecological paradigm.

In the mainstream outdated pest management science, Integrated Pest Management (IPM) was shown as the most progressive approach so far. Here, NIPHM has evolved IPM packages for numerous crops and this includes grapes (here, chemical alternatives to the proposed-to-be-banned pesticides can be seen). This is available at <https://niphm.gov.i/IPMPackages.html>.

There are also NPM alternatives and approaches to pest management in various crops available on [www.pestoscope.com](http://www.pestoscope.com) which is tried and tested in lakhs of acres of CMSA (Community Managed Sustainable Agriculture) in Andhra Pradesh.

Another ICAR institute, Indian Institute for Farming Systems Research (IIFSR) in Modipuram had brought out its own set of organic farming packages for different crops and states based on a multi-year research. These recommendations are available at: • [http://www.iifsr.res.in/npof/index.php?id=package\\_of\\_practices](http://www.iifsr.res.in/npof/index.php?id=package_of_practices) . Therefore, farmers have the choice of choosing from IPM, NPM and organic PoPs.

## Arguments by Ministry of Chemicals and Fertilizers

An argument has been made by Ministry of Chemicals and Fertilizers (by Secretary R.K. Chaturvedi on 2<sup>nd</sup> June 2020 – Ref C-I-25016/3/2016-CHEM.II – Part (2)) in its letter to Ministry of Agriculture that even where India wishes to ban insecticides, it must continue exporting these pesticides. This will throw, and will also show India in poor light where India exports such insecticides which are being banned in the country too and show India avoiding its responsibility towards other nations. India must in fact insist with other countries to not export directly or through transit routes pesticides with strong restrictions or bans on their usage in their home countries.

It has been argued by industry entities that the pesticides have been registered after all requisite data has been submitted on bio-efficacy, toxicity, residue etc., whereas in reality there are several pesticides that have been “deemed to be registered” even in the absence of such data. It is not as though the industry is not aware of this fact. This means that such pesticides were considered to be registered without full biosafety and efficacy assessment being taken up. DRPs in the list of 27 pesticides include Atrazine, Butachlor, Captan, Carbendazim, Carbofurn, Dicofof, Dimethoate, Dinocap, Diuron, 2,4-D, Malathion, Manozeb, Monocrotophos, Quinalphos, Thiram, Zineb and Ziram at least.

Even for the review that led to this proposed ban, industry did not comply with data required by the regulators and minutes of the RC meetings show that such data was repeatedly asked for. It is noted from various documents that RB Singh Committee (1999) asked for certain studies to be taken up on Captal, Dicofof and Thiram, that the CD Mayee Committee (2005) asked for data on Atrazine, Butachlor, Mancozeb, Monocrotophos, Quinalphos, Thiophanate Methyl, Zineb and Ziram and Anupam Varma Committee also gave time till December 2017 for required data to be submitted. It is clear from the notification of the draft ban order in May 2020 that such studies have not been done and data submitted. Meanwhile, there is adequate data that justifies the ban.

Further, it is laughable to say that “sudden banning” will lead to wasted investments, when it is at industry’s pace that Ministry of Agriculture has actually been moving and there is nothing sudden about the draft ban order. There is also nothing unilateral about the review process and subsequent decisions since industry was part of the review process. Pesticides industry associations as well as individual MNC as well as Indian companies’ representatives participated in the Varma Committee processes. There is also nothing about this draft ban order that is ‘abrupt’, coming as it does 7 years after a review committee was constituted in 2013.

Another argument being referred to in this letter from DCPC is that these pesticides need to be considered for dealing with desert locusts is already covered in the Ministry’s drafts where exception on using specific insecticides for desert locusts is already mentioned. In fact, the Ministry of Agriculture must prioritize non-pesticide management techniques of dealing with desert locusts which have been highlighted in much detail.

The comments mentioning that pesticide usage in India is much lesser compared to other developed countries is fallacious. This argument is highly misleading because exposure routes are what matter, not (intensity of) usage of pesticide. Compared to other countries with high levels of mechanization, where a much smaller subset of farmers and farming community comes in contact with pesticides, farmers and farm workers are exposed in more direct ways to deadly pesticides in India and this is a more important aspect of risk assessment.

Arguments that this ban will lead to MNCs taking over our market is not a valid argument in this context since poisons are poisons, irrespective of which company makes them and have to be stopped. Further, Indian and foreign companies are working together in the case of numerous molecules. It is clear that many Chinese



companies will find their markets being cut off with this ban, since the share of imports from China is the largest when it comes to these 27 pesticides. The industry is also throwing unreliable data about potential losses from the proposed ban. Meanwhile, it is clear that human lives/livelihoods and environmental regeneration matter more than profiteering by the industry.

A detailed response to the DCPC from ASHA is available here: <http://www.kisanswaraj.in/2020/06/25/ashas-letter-to-secretary-dept-of-chemicals-petrochemicals-on-his-letter-to-the-ministry-of-agriculture-about-proposed-ban-on-27-pesticides/>

We end this letter by once again welcoming this draft ban order, by demanding that the final ban order on all 27 pesticides be published soonest and also urging the Ministry to immediately take up review of other bannable pesticides which are around at least 75 in number. We would like the government to know that such bans indicate that our regulatory regime is not stagnant and is actually co-evolving with bio-safety science and post-modern pest management science. This is an opportunity that India has to take a leadership role in showing the world how agro-ecology can be scaled up and how a paradigmatic shift is possible by bold decisions around banning and phasing out agro-chemicals.

Sincerely,

Kavitha Kuruganti

On behalf of ASHA (Alliance for Sustainable and Holistic Agriculture)

8880067772

Endorsed By –

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- 27) Dr Jyothi Krishnan, Social Scientist, Trivandrum
- 28) Karpagam, organic farmer, Point Return, Maduranthagam
- 29) K.Jagadeesan, Advisor, Federation of Tamil Nadu Rice Mill Owners Association
- 30) K. J. Joy, Society for Promoting Participative Ecosystem Management (SOPPECOM), Pune
- 31) Kerala Jaiva Karshaka Samithy (State Secretary)
- 32) F. C. S. & I.P. Ketan S. Dand, Shantilal Dand & Co, Corporate Law, Governance & Insolvency
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- 51) Regi M George/ Lalitha Regi, Sittilingi Organic Farmers Assn, Sittilingi, Harur Tk, Dharmapuri
- 52) Richa Audichya, Jan Chetna Sansthan, Rajasthan
- 53) Prof. S Janakarajan, MIDS
- 54) Smt Rekha Ramu, Pandeswaram Panchayat President
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- 57) Seema Kulkarni, MAKAAAM, Pune
- 58) Seema Purushothaman - Professor, Azim Premji University, Bengaluru
- 59) Selvam, Tamil Nadu Organic farmers federation
- 60) Sheelu Francis, Womens Collective, Tamil nadu
- 61) Shuba Bharadwaj, Mahatmaji seva sangam
- 62) Adv. Sivakumar, Nalla Unavu, Chennai
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- 65) Dr. Suchitra Ramkumar
- 66) Sujatha Byravan PhD, Scientist, Chennai
- 67) Dr. Sultan Ahmed Ismail, Soil Biologist & Ecologist, Ecoscience Research Foundation



- 68) Dr Suman Sahai, Chairperson, Gene Campaign, Uttarakhand, Delhi
- 69) S Thilak Raj, Managing Trustee, Sevai Karangal
- 70) Tanuja Aundhe, Aditya Environmental Services Pvt. Ltd, Lawyer, Mumbai
- 71) Dr. T.Thirunarayanan, Centre for Traditional Medicine and Research
- 72) Dr. Tushar Chakraborty, Molecular Biologist. Retired from CSIR as Principal Scientist. Science Writer and Communicator
- 73) Uma Shankari - Farmer, Venkatramapuram, Vallivedu, Chittoor, Andhra Pradesh
- 74) *Dr US Natarajan*, Principal Scientist (Retd.), ICAR, Srivilliputtur (TN)
- 75) VM. Parthasarathy, Farmer, Chennai
- 76) V.Arun, The forest way
- 77) Dr.V.S.Vijayan, Salim Ali Foundation
- 78) Veena M, Environmental Educator and Activist, Trivandrum

Sl. No.	Name of the Pesticide	BAN in other countries, as per PAN Consolidated List (April 2017) <sup>1</sup>	UNEP April 2018 list <sup>2</sup>	Anupam Varma Committee Notings	Relevant information on this pesticide
1	Acephate	4 – China, EU, Oman and Palestine	UAE, Oman, EU	Notes that it is banned in 10 countries inc. EU 28; notes pest resurgence and toxicity to honeybees.	<ul style="list-style-type: none"> <li>• Insecticide.</li> <li>• “Highly Hazardous Pesticide”.</li> <li>• Acephate’s degraded product called Methamidophos is considered to be a more toxic product than Acephate itself. It has not been registered in India and banned in other countries.</li> <li>• Acephate is implicated in export rejections and also numerous acute pesticide poisoning incidents.</li> </ul>
2	Atrazine	10 incl. EU	Cabo Verde, Chad, Egypt, Gambia, Mauritania, Niger, Oman, Senegal, Togo, UAE	Notes that it is banned in 14 countries, restricted in 6 countries inc. EU, withdrawn in Switzerland etc.	<ul style="list-style-type: none"> <li>• Herbicide.</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Endocrine Disrupting Chemical in EU classification</li> <li>• Certain data pertaining to this pesticide was repeatedly asked for starting from the RB Singh Committee in 1999, followed by CD Mayee Committee in 2006, the Inter-Ministerial Committee in 2007 and later by Anupam Verma Committee</li> </ul>
3	Benfuracarb	1 – EU	EU, UAE	Notes that it is restricted in Korea. Is in “limited use” in India.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• Carbofuran, a breakdown product of Benfuracarb is documented to be more persistent and toxic than the parent chemical and is part of the Rotterdam Convention pesticides. Trichlorfon is being phased out in India based on the scientific principle of the break-down product’s toxicity. The same principle has to be applied here too.</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Highly toxic to bees</li> </ul>
4	Butachlor	4 - Brazil, Colombia, Malaysia, EU (not approved)		Notes that it is restricted in Korea.	<ul style="list-style-type: none"> <li>• Herbicide</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable/Likely Carcinogen, as per US EPA</li> <li>• Features in a letter issued in February 2007 after an inter-ministerial committee review with a warning that studies that are being asked for have to be completed within 5 years, failing which the regulator will delete the label claims</li> </ul>

<sup>1</sup> Accessed from <http://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/>

<sup>2</sup> This is the latest United Nations List by the time the Respondents filed their Counter Affidavits in this Hon’ble Court, available here:

[https://wedocs.unep.org/bitstream/handle/20.500.11822/25658/UNEP\\_BCCOP\\_2\\_8\\_EN.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/25658/UNEP_BCCOP_2_8_EN.pdf?sequence=1&isAllowed=y)

					<p>of the pesticide.</p> <ul style="list-style-type: none"> <li>Anupam Verma Committee (2015) noted that studies asked by RB Singh Committee in 1999 were also not provided. RC had already decided that certificate of registration will be deemed to be invalid from 1<sup>st</sup> January 2018.</li> </ul>
5	Captan	6 - Cambodia, Fiji, Guinea, Oman, Saudi Arabia, Vietnam	Cambodia, Egypt, Oman, Saudi Arabia	Notes ban in Denmark, Fiji & Korea; restriction in Australia, Kuwait & Sweden; withdrawn in Finland & Norway.	<ul style="list-style-type: none"> <li>Fungicide</li> <li>"Deemed to be Registered"</li> <li>Data asked by RB Singh Committee as early as 1999 not submitted. RC had already decided that certificate of registration will be deemed to be invalid from 1<sup>st</sup> January 2018.</li> <li>Implicated in exports rejection.</li> </ul>
6	Carbendazim	2 - Mozambique, EU (not approved)		Notes restriction in Sweden.	<ul style="list-style-type: none"> <li>Fungicide</li> <li>"Deemed to be Registered"</li> <li>"Highly Hazardous Pesticide"</li> <li>EU GHS Mutagenic and Reproductive Toxicant</li> <li>Features in a letter issued in February 2007 after an inter-ministerial committee review with a warning that studies that are being asked for have to be completed within 5 years, failing which the regulator will delete the label claims of the pesticide.</li> </ul> <p>RC had already decided that certificate of registration will be deemed to be invalid from 1<sup>st</sup> January 2018.</p> <ul style="list-style-type: none"> <li>Implicated in export rejections as well as acute pesticide poisoning instances.</li> </ul>
7	Carbofuran	22 incl. Canada, China, EU, Vietnam	Antigua & Barbuda, Bangladesh, Burundi, Canada, Cabo Verde, Chad, EU, Gambia, India, Jordan, Kenya, Mauritania, Niger, Saudi Arabia, Senegal, Togo, UAE	Notes ban in 8 countries, restriction in 6 countries. Highly toxic to honeybees. Class Ib.	<ul style="list-style-type: none"> <li>Insecticides</li> <li>"Deemed to be Registered"</li> <li>"Highly Hazardous Pesticide"</li> <li>WHO Class Ib pesticide</li> <li>As already mentioned above, in the context of Benfuracarb, highly toxic and features at international level on Prior Informed Consent list.</li> <li>Not all MRLs are defined in India</li> <li>Implicated in acute poisoning instances</li> <li>Highly toxic to bees</li> </ul>
8	Chlorpyrifos	2 - Palestine, Saudi Arabia	Bangladesh, Saudi Arabia, UAE	Notes ban in Sri Lanka and restriction in 4 countries. Toxic to fish and bees.	<ul style="list-style-type: none"> <li>Insecticide</li> <li>"Highly Hazardous Pesticide"</li> <li>Not all MRLs defined</li> <li>Implicated in export consignment rejections and also in acute pesticide poisoning instances</li> <li>RC had already decided that certificate of registration will be deemed to be invalid from 1<sup>st</sup> January 2018.</li> <li>While used for locust control, other pesticides like Diflubenzuron,</li> </ul>

					<p>Fipronil and Lambdacyhalothrin are also used for the same.</p> <ul style="list-style-type: none"> <li>• Highly toxic to honeybees and fish.</li> </ul>
9	Deltamethrin	0		<p>Notes restriction in Denmark. Pest resurgence problem noted. Highly toxic to bees.</p>	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Implicated in civil society pesticide poisoning reports in the past.</li> <li>• Features in residue analysis studies in Indian food samples.</li> <li>• Though recommended for locust control, other pesticides like Diflubenzuron, Fipronil and Lambda Cyhalothrin are also available for locust control.</li> <li>• EU Reproductive Toxicant</li> <li>• Highly toxic to honeybees.</li> </ul>
10	Dicofol	18 incl. Brazil, Canada, EU, Indonesia, Japan, Switzerland, USA etc.	Antigua & Barbuda, Bangladesh, Egypt, EU, Guinea, Japan, Mauritius, Netherlands, Oman, Russian Federation, Saudi Arabia, Switzerland, UAE	<p>Banned in 10 countries; Restricted in EU, Korea &amp; Venezuela. Withdrawn in Sweden.</p>	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Deemed to be Registered”.</li> <li>• Thrown up in residue analysis studies in Indian food samples. In the list of pesticides that a state government has desired to ban.</li> <li>• Implicated in export consignment rejection</li> </ul>
11	Dimethoate	4 incl. Cameroon, Saudi Arabia, Sri Lanka, Suriname	Bangladesh, Egypt, Saudi Arabia, UAE	<p>Banned in Korea. Restricted in Belize, Cyprus &amp; USA. Highly toxic to honeybees.</p>	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Deemed to be Registered”.</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Highly toxic to honeybees.</li> <li>• Not all MRLs are defined.</li> <li>• Implicated in export rejections</li> </ul>
12	Dinocap	2 Korea and EU	Myanmar	<p>Banned in Argentina &amp; Sweden. Teratogenicity risk noted.</p>	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Deemed to be Registered”.</li> <li>• “Highly Hazardous Pesticide”.</li> <li>• Ban supported by a state government too.</li> <li>• EU Reproductive Toxicant</li> </ul>
13	Diuron	1 Mozambique	Bangladesh, UAE	<p>Banned in Angola and Russian Federation; withdrawn in Sweden. Probable Carcinogen. Water contaminant.</p>	<ul style="list-style-type: none"> <li>• Herbicide</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable human carcinogen as per US EPA</li> </ul>
14	2,4-Dichlorophenoxy Acetic Acid	3 Mozambique, Norway, Vietnam	Norway, UAE	<p>Banned in Norway, Korea &amp; Kuwait; Restricted in Belize and Denmark; Withdrawn in Sweden. Possible carcinogen to humans.</p>	<ul style="list-style-type: none"> <li>• Herbicide</li> <li>• “Deemed to be Registered”. “Highly Hazardous Pesticide”</li> <li>• Possible human carcinogen</li> <li>• Dioxin, a byproduct of 2,4-D production is carcinogenic.</li> <li>• Endocrine Disrupting Chemical in EU classification</li> </ul>

15	Malathion	2 - Syria, Palestine	Bangladesh, Syria, UAE	Banned in EU; Restricted in Srilanka, Canada and Korea. Highly toxic to honeybees. Probable human carcinogen.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable human carcinogen as per IARC.</li> <li>• Thrown up in residue analysis studies in India.</li> <li>• Not all MRLs are defined</li> <li>• Highly toxic to honeybees.</li> <li>• Is one of the recommended pesticides for locust control but other chemicals like Diflubenzuron, Fipronil and Lambdacyhalothrin are also used for the purpose.</li> </ul>
16	Mancozeb	1 - Saudi Arabia	Egypt, Saudi Arabia, UAE	Banned in Libya Arab Janmahiria; Restricted in Korea & Sweden. Probable carcinogen.	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable/Likely Carcinogen by US EPA.</li> <li>• Implicated in civil society reports on acute poisoning of agri-workers.</li> <li>• Toxic to fish.</li> </ul>
17	Methomyl	13 incl. China, Columbia, Korea, Myanmar	Antigua & Barbuda, Cambodia, Guinea, Laos, Saudi Arabia, UAE	Banned in 6 countries; Restricted in 6 countries.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• Class Ib, “Highly Hazardous” pesticide as per WHO acute toxicity classification</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Highly toxic to honeybees.</li> <li>• Ban desired by state government too.</li> <li>• Implicated in export rejections and acute poisoning instances</li> </ul>
18	Monocrotophos	33 incl. China, EU	Argentina, Australia, Bangladesh, Barbados, Bulgaria, Burundi, Cambodia, Costa Rica, Guinea, Guyana, Kenya, Laos, Mauritius, Pakistan, South Africa, Suriname, Thailand, UAE, Uruguay	Banned in 12 countries including EU; Restricted in 7 countries. Withdrawn in USA. In India, banned for use on vegetables. Highly toxic to bees. Class Ib.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Deemed to be Registered”</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Class Ib as per WHO classification</li> <li>• Implicated in numerous acute poisoning incidents in India.</li> <li>• Highly toxic to honeybees.</li> <li>• Thrown up in residue analysis studies.</li> <li>• State governments desire a ban.</li> <li>• Not all MRLs are defined.</li> <li>• Implicated in export rejections</li> </ul>
19	Oxyfluorfen	1 - Mozambique	Egypt	Restricted in 6 countries. Withdrawn in Norway. Probable carcinogen.	<ul style="list-style-type: none"> <li>• Herbicide</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable/Likely Carcinogen as per US EPA</li> </ul>
20	Pendimethalin	1 - Norway	Egypt, Norway	Banned in Norway; Restricted in Sweden.	<ul style="list-style-type: none"> <li>• Herbicide</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Thrown up in residue analysis studies in India</li> <li>• Bio-accumulation &amp; high persistence</li> </ul>

21	Quinalphos	4 - Brazil, EU, Korea, Malaysia	Malaysia	It is restricted in Korea. Highly toxic to honey bees.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Deemed to be Registered”.</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Endocrine Disrupting Chemical as per EU classification</li> <li>• Highly toxic to bees</li> <li>• Implicated in acute poisoning reports in India.</li> <li>• Not all MRLs defined</li> <li>• Implicated in export rejections</li> <li>• Though recommended for use for locust control, other chemicals like Diflubenzuron, Fipronil and Lambda cyhalothrin are also recommended.</li> </ul>
22	Sulfosulfuron	1 - Norway	Norway	Banned in Norway. Pest resistance reports exist.	<ul style="list-style-type: none"> <li>• Herbicide</li> </ul>
23	Thiodicarb	2 - EU, Mozambique	EU, UAE	Banned in EU. Restricted in Belize. Resurgence in mites noted. Toxic to honeybees. Likely carcinogen.	<ul style="list-style-type: none"> <li>• Insecticide</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probably/Likely Carcinogen as per US EPA.</li> <li>• Highly toxic to honeybees.</li> <li>• Implicated in export rejections</li> </ul>
24	Thiophanate-Methyl	0	Bangladesh	Banned in Denmark; Restricted in Sweden. Unacceptable persistence in soil and toxicity to earthworms. Probable carcinogen as per EPA.	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Highly Hazardous Pesticide”</li> <li>• Probable/Likely Carcinogen as per US EPA.</li> <li>• Not all MRLs defined</li> <li>• Ban sought by exporters.</li> <li>• Toxic to earthworms.</li> </ul>
25	Thiram	0	Burundi, UAE	Banned in Germany, Denmark and Sweden; Restricted in Korea & Russia.	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Deemed to be Registered”.</li> <li>• Could be an endocrine disruptor</li> <li>• Not all MRLs defined</li> </ul>
26	Zineb	6 incl. Brazil, EU, Korea	Bangladesh, Ecuador, Egypt, Mauritius, Oman, Pakistan, Saudi Arabia, UAE	Banned in Ecuador and Pakistan; Withdrawn in USA, Korea & EU.	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Deemed to be Registered”.</li> </ul>
27	Ziram	1 -Brazil		Banned in Denmark & Russia. Restricted in Sweden.	<ul style="list-style-type: none"> <li>• Fungicide</li> <li>• “Deemed to be Registered”.</li> <li>• Not all MRLs are defined</li> </ul>