



THE NEED TO BAN  
GLYPHOSATE...



# Glyphosate

- Is a non-selective herbicide for broad leaf weed and grass control
- Widely used, and Monsanto's proprietary version RoundUp most popular
- First registered for use in 1974
- Plants treated with glyphosate translocate the systemic herbicide throughout the plant parts (roots, fruits, growing points) where the chemical blocks the enzymatic activity of EPSPS, disrupting the production of an amino acid (shikimate pathway disruption) ultimately leading to the plant's death.

# Glyphosate In India

- Registered for use only in tea and non-cropped area under the Insecticides Act 1968
- However, rampant unauthorised illegal use exists
- Being used on illegal HT cotton, as well as dessicant in some crops (high glyphosate residues found in dals imported into Canada from India)
- FSSAI's MRL for Tea is 1 mg/kg, and even though not allowed to be used in Paddy cultivation, MRL for Rice has been fixed at 0.01 and for Meat & Meat products at 0.05mg/kg
- MRL has been initially fixed for lentils at codex levels (Beans dry 2mg/kg, Lentil dry 5mg/kg, Peas dry 5mg/kg, Soybean dry 20mg/kg) and later altered to 0.01mg/kg (in cases of pesticides for which MRLs have not been fixed) – [FSSAI 6<sup>th</sup> May 2019 order](#)
- Indians also exposed to glyphosate residues through imports

# Glyphosate's documented health impacts

- Associated with non-Hodgkin's Lymphoma which is connected to immune system impairment, autism, Acute Myeloid Leukemia, shortened gestational periods in pregnancies, endocrine disruption, developmental abnormalities, reproductive health problems etc. Spontaneous abortions also associated with Glyphosate. Cell death of embryonic, placental and umbilical cord cells recorded in studies.
- It is not just glyphosate but “inert ingredients” like POEA which are problematic.
- Then there is the degradate of glyphosate AMPA which has its own toxicity (it is also phyto-toxic)

# Glyphosate's health impacts...Contd

- Glyphosate can mimic an essential amino acid Glycine in any protein, thus creating 'rogue proteins', disrupting all normal functions of that protein, leading to a multitude of maladies, including systemic diseases and foetal deformities.
- Glyphosate also functions as an antibiotic - Disruption of shikimate pathway happens in many bacteria too
- Disturbance of the human gut micro-biota
- Appears to have more negative impacts on beneficial bacteria – allows pathogens to flourish
- Chelating important minerals so body doesn't have access to them. Excessive exposure by body microbes to an antibiotic leads to resistance. Kidney failure incidence in Sri Lanka.

# Studies from India point to dangers..

- ITRC Lucknow scientists have published two studies in 2009 and 2010 on glyphosate
- In one study, glyphosate induced carcinogenicity in mouse skin was confirmed
- In another, geno toxicity and cytotoxicity of glyphosate found – chromosomal aberrations and micro-nuclei were studied

<https://www.hindawi.com/journals/jt/2009/308985/>

<https://www.ncbi.nlm.nih.gov/pubmed/20045496>

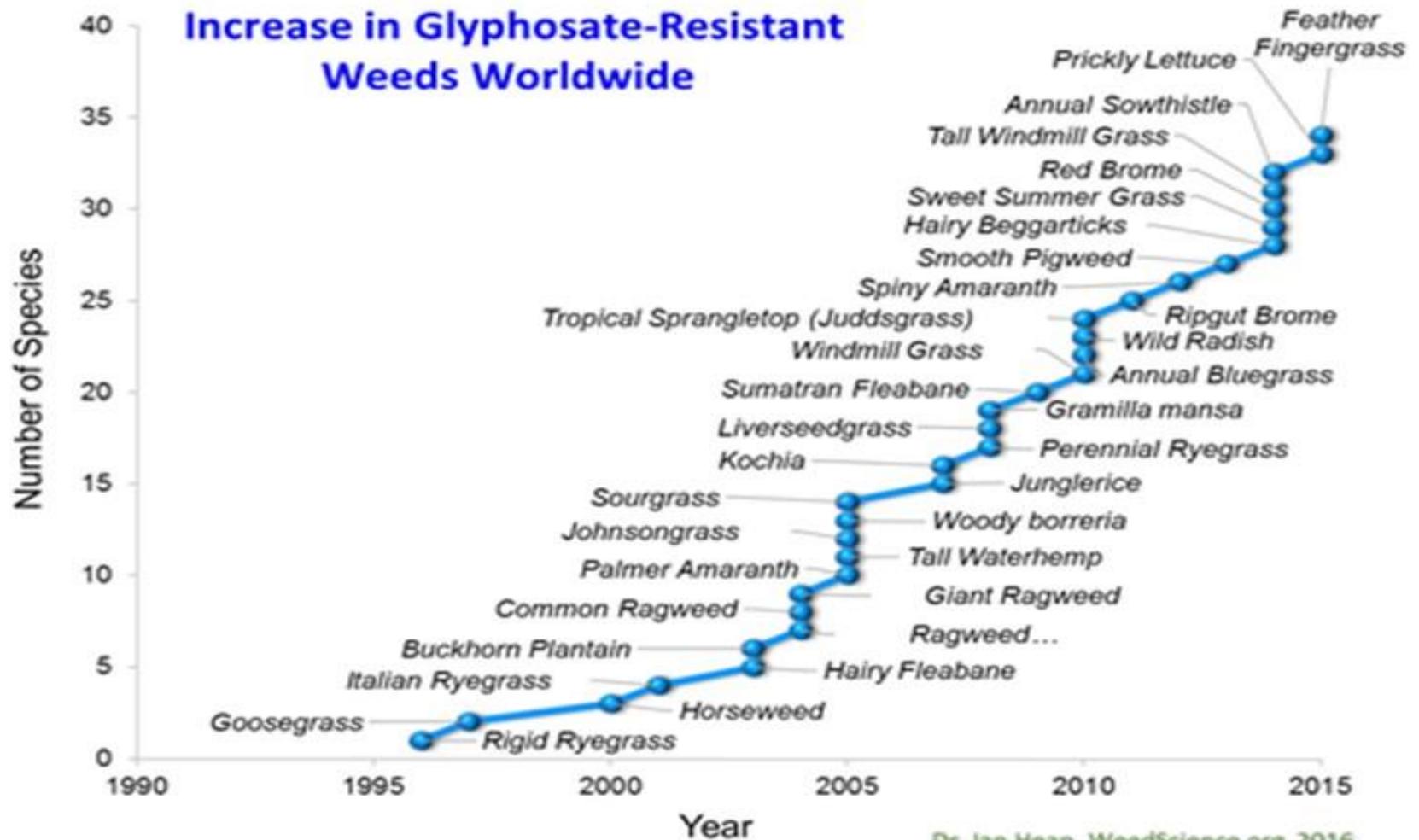
# Glyphosate in the environment

- Directly impacts a variety of non-target and beneficial organisms
- Known to cause harmful impacts on earthworms
- Linked to honeybee decline
- Kills beneficial insects like parasitoid wasps, lacewings and ladybugs
- Causes resistance in weeds – creation of SUPERWEEDS – leading to more use of glyphosate as well as other deadly herbicides

# Glyphosate usage increase

- Globally, 15-fold increase between 1996 (first GM crop introduction) and 2014
- 2/3<sup>rd</sup> of USA's total usage of glyphosate b/w 1974 and 2014 was in the decade of 2004-2014
- On an average, 1 kg/ha of glyphosate being used in the USA on every hectare of cultivated cropland
- Appx. 40% US crop land affected by superweeds
- Exposure of citizens to glyphosate increased by 500%

# Constant Exposure to Single Herbicide has Rapidly Led to Increased Number of Glyphosate Resistant Weeds Post 1995.



## USA 'SUPERWEEDS'

Horseweed is one.....

- Grows huge, thick.
- Farmers Nightmare

### What do farmers do ?

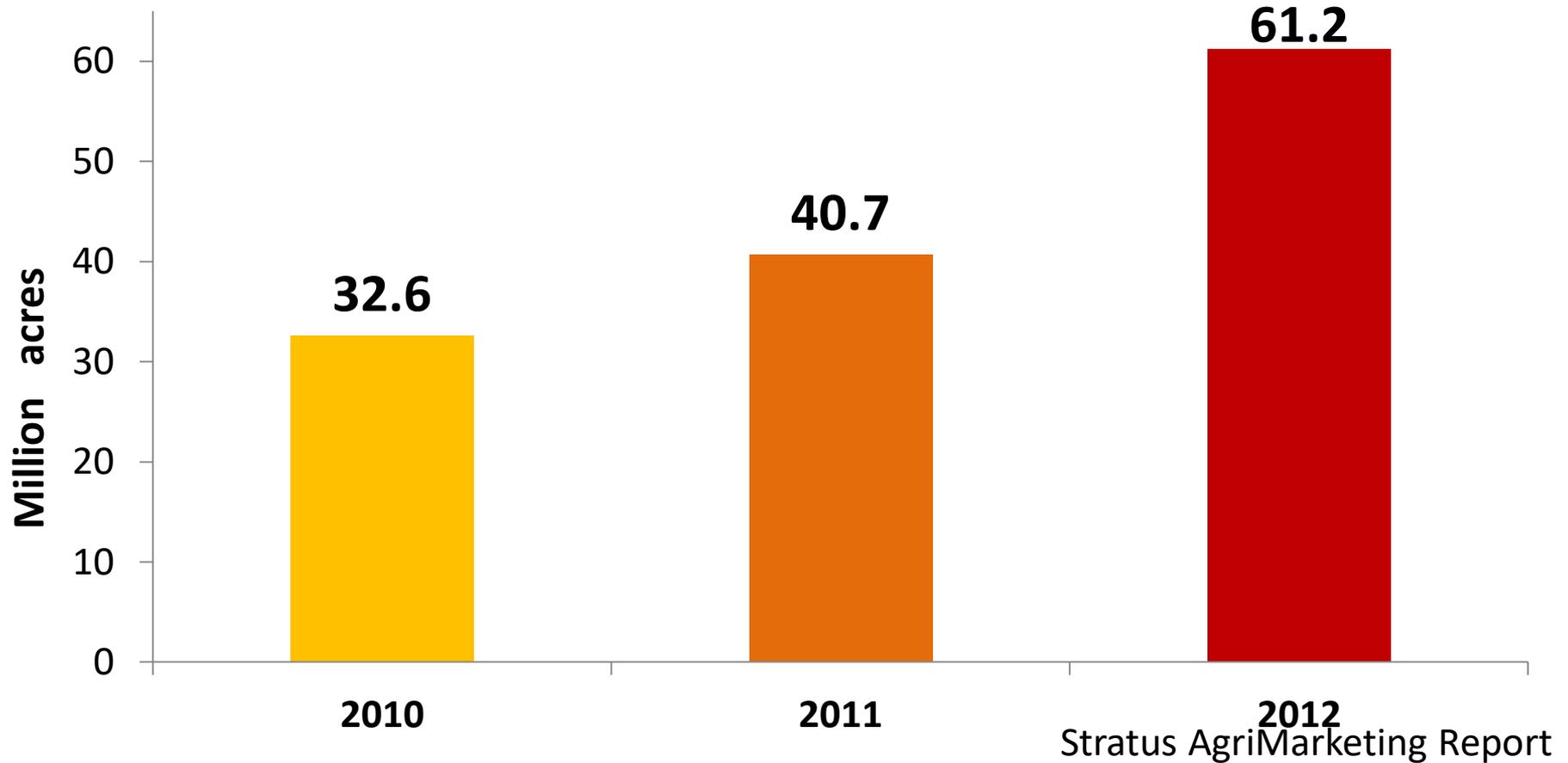
- Spray more glyphosate.
  - Spray more toxic herbicide cocktails.
  - Cut by hand.
  - Abandon field.
- 
- **Monsanto now pays farmers to spray other herbicides !**
  
  - **Over 100,000 acres abandoned in USA.**

**CAN INDIA  
AFFORD THIS ?**



# WARNINGS DENIED AND IGNORED FOR YEARS

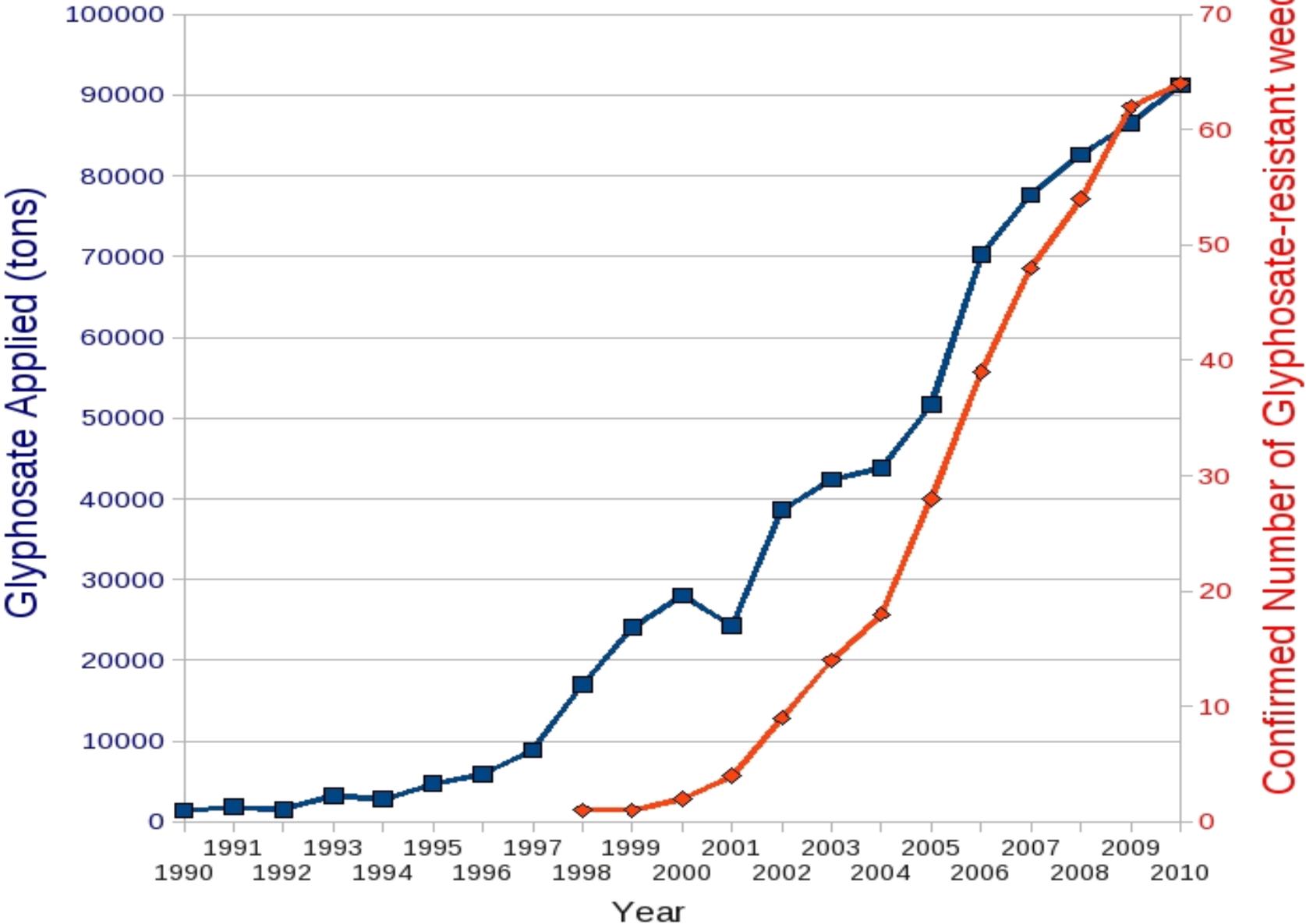
## 'Superweeds' grow rapidly across 40% of US Farmland



# Glyphosate and Super-weeds

## Corn, Soy & Cotton

■ glyphosate  
◆ Super-weeds





**IN 2015, GLYPHOSATE  
CLASSIFIED BY THE WHO's  
International Agency for  
Research on Cancer as  
*"A PROBABLE HUMAN  
CARCINOGEN"* (Group 2A)**

**CANCER RISKS : ATTACKED BY INDUSTRY, IGNORED BY  
REGULATORS FOR DECADES; AS WAS DONE FOR TOBACCO**

# Recent Court Cases in USA

- Millions of dollars of damages have been awarded in three high profile cases so far in the USA
- 13400 lawsuits pending now against Bayer, the new owner of Monsanto which created RoundUp
- Court cases declassified secret documents of Monsanto showing company manipulation of safety studies
- Monsanto ran secret projects on critics and collected personal information, spied and infiltrated....this is being investigated

# Glyphosate residues a serious concern

- Acceptable Daily Intake (ADI) levels have been fixed very high and are questionable in terms of safety
- MRLs are being repeatedly increased from 1997 onwards by Codex – in some commodities, 20-fold to 30-fold increase has happened after HT crop introduction!
- Glyphosate contamination widespread, as seen in USA, Europe, in human urine samples etc.

# Active bans & restrictions now...

- Austrian parliament passed resolution to ban glyphosate soon.
- Belgium banned individual use of glyphosate.
- Bermuda outlawed private and commercial sale of all glyphosate based herbicides in 2017.
- In 2018, Czech Republic put strict restrictions on use of glyphosate and banned pre-harvest spraying.
- Denmark implemented new rules banning the use of glyphosate on all post-emergent crops to avoid residues on foods, starting from July 2018.
- El Salvador adopted a law banning glyphosate in 2013.
- In August 2016, Italy's Ministry of Health banned the use of glyphosate in public areas and also as a pre-harvest spray.
- Malawi has suspended import permits for Glyphosate in April 2019.
- Netherlands has banned all non-commercial use of glyphosate.
- Portugal has prohibited the use of glyphosate in all public spaces.
- Vietnam has announced a ban on glyphosate imports in March 2019 and will also disallow its use in Vietnam soon.
- Sri Lanka had banned glyphosate in 2015, but lifted in partially in July 2018.
- Six middle eastern countries have banned the import and use of glyphosate based herbicides in coordination with each other in 2015 and 2016 and include Oman, Saudi Arabia, Kuwait, United Arab Emirates, Bahrain and Qatar.
- Many other regions of the world have severe restrictions or bans on glyphosate use.

# Special concerns in India

- Poor rural women have manual de-weeding as the largest source of employment in agriculture – women in India have agriculture as the mainstay of their livelihood largely. Herbicides will reduce employment days for these women, in a situation when women's overall workforce participation is on the decline
- WEEDS are not unwanted plants in rural India – they are food, fodder and medicinal plants.....
- Small landholdings will mean crop damage to neighboring crops due to herbicide drift – this will lead to more rural strife and distress
- Inter-cropping/Mixed cropping NOT possible with glyphosate use

# Current situation in India....

- Andhra Pradesh stopped licensing of sales during crop cultivation period starting from 2018
- Telangana and Maharashtra followed suit
- Punjab passed its orders subsequently to stop sales of Glyphosate – no tea or non-cropped areas
- Kerala recently stopped sales of glyphosate in the state
- **HOWEVER, IMPLEMENTATION OF THESE ORDERS IS QUITE DISMAL**

# Regulatory situation in India...

- Glyphosate is a classic case show-casing all that is wrong with the pesticides regulatory regime – Acceptable Daily Intake levels questionable, inert ingredients have not been tested for safety, MRLs are fixed without relation to permitted uses when registered etc.
- No regulation of unapproved illegal uses – no end use regulation
- No enforcement mechanisms for state level stopping of sales
- Prohibition authority only with Central Government
- Centre turning a blind eye to the emerging issues....

# What is needed now?

- Government of India needs to ban Glyphosate straightaway – it recently admitted in the Parliament (Jul. 2019) that there are alternatives
- Governments need to crack down on illegal HT crop seed supply systems, starting from the seed production stage
- Non-chemical weed control alternatives should be a strong part of extension messages of governments – Farming community should be reminded of the Indian view on “weeds”
- Governments should also create a scheme parallel to NREGS, to subsidise weeding costs in farming, and implementing the scheme through the NREGS institutional apparatus
- A price support system for farmers, which allows farmers to pay decent wages to agricultural workers is needed
- All the above will create a win-win situation for farmers, agricultural workers, consumers and environment

**Sign this petition to the Prime  
Minister of India, and let your voice  
count!**

<https://www.change.org/p/prime-minister-of-india-ban-glyphosate-and-its-mixtures-including-roundup-pmoindia-icarindia-moefcc>

# THANK YOU!

For more information, contact:

[indiasafefood@gmail.com](mailto:indiasafefood@gmail.com),

[gfreeindia@gmail.com](mailto:gfreeindia@gmail.com)