



## PRESS STATEMENT

### 54 COMMUNITY ORGANIZATIONS AND NGOs OPPOSE GENETICALLY MODIFIED MR219 RICE FIELD TESTS

Referring to the announcement on the Ministry of Water, Land and Natural Resources (KATS) website, the National Biosafety Board (LBK), is evaluating an application from the Malaysian Agricultural Research and Development Institute (MARDI) to conduct a confined field trial on genetically modified rice (GM rice) that is tolerant to glyphosate and resistant to paddy diseases caused by bacteria and fungi. This experiment will reportedly to be carried out at MARDI Arau Station, located in the Tambun Tulang area, in Perlis.

The GM rice that will be tested comes from the well-known Malaysian variety of MR219 with an additional characteristic of tolerant to glyphosate herbicide and susceptibility to bacteria *Xanthomonas oryzae pv oryzae* and fungus *Pyricularia spp.* This GM rice is not produced by a typical hybrid method but it is produced in a laboratory using genetic modification technology to create a novel GM rice that does not exist in nature. The application to plant GM paddy in the field has raised serious concerns over its impact on humans and the environment.

There is a risk of genetic contamination of conventional rice and wild rice with this modified transgenic material when it is planted in the field. While developers claim that field trials have measures in place to contain and prevent gene flow escapes into the environment, among them by implementing the test in a gated area and within netted structures, there is still a risk of escape of foreign genes through through insects, birds or other animals or even machinery and workers. In fact, according to the GM Contamination Register, up to 2014 paddy crops have the highest number of contamination incidents through field experiments, although no GM rice is grown commercially so far anywhere in the world. However, what is more important, we do not want GMO products to be commercialized after the field experiment.

Genetic engineering is an inherently unpredictable process associated with unintended effects. For example, recent studies have detected altered metabolite levels in glyphosate tolerant rice and maize varieties. The maize line had significant increases in compounds that may be toxic to people in certain contexts. The inclusion of a gene to confer fungal resistance in this GM rice also raises concerns, as this gene encodes for a protein that regulates gene expression. This introduces the possibility that the expression of numerous genes may be unintentionally altered, with potential consequences for food safety, such as disrupted nutritional, allergenic or toxin profiles; or altered agronomic properties that may compromise the high yielding properties of MR219 rice thus risking our food security when this rice is commercially planted.

This GM rice that is specially designed to tolerate glyphosate will increase the use of chemical and the selling of seed packaged with glyphosate will only increase the cost to farmers and benefit certain parties. When the paddy is grown in the fields and sprayed with glyphosate, all weeds including weedy rice and other varieties of rice will die except for this GM rice. This means that adjacent paddy fields also have no choice but to use the same

seeds and chemical. This is a form of exploitation of farmers by forcing them to buy and use more herbicide that will definitely benefit chemical companies. Glyphosate toxicity has been widely documented in both independent and industry data. Most recently Bayer, which bought over Monsanto, lost three high profile court cases in the US for not warning of the cancer risks of glyphosate herbicides that had resulted in people suffering from non-Hodgkin Lymphoma. Weed elimination strategies using herbicide-tolerant plants has been ineffective as was the case with CL rice or Padi Kebal as it is called locally. After 10 years of use, weeds have become increasingly resistant and over time the stronger chemical have to be used.

There is very little information on this specific GM rice variety. No details appear to be publicly available at the molecular level to ensure that the genetic modification has not caused any unintended effects, which is crucial to ascertain safety, particularly for rice, a staple crop in Malaysia and the wider region. If there is no such evidence as required in the Cartagena Biosafety Protocol ratified by Malaysia in 2003, the GM rice should not be approved for field trials in Malaysia.

GIVEN THE ABOVE CONCERNS, 54 COMMUNITY ORGANIZATION AND NGOs OPPOSED ANY FIELD TRIAL RELEASE OF THIS GM RICE IN MALAYSIA. ATTACHED WITH THIS STATEMENT, THE MEMORANDUM FROM FOOD SECURITY AND SOVEREIGNTY FORUM THAT HAS BEEN SUPPORTED BY ORGANIZATIONS AS LISTED.

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**FORUM KEDAULATAN MAKANAN MALAYSIA**  
MALAYSIA FOOD SECURITY AND SOVEREIGNTY FORUM



**MEMORANDUM TO NATIONAL BIOSAFETY BOARD ON THE REQUEST FOR APPROVAL OF  
GENETICALLY MODIFIED (GMO) MR219 RICE FIELD TESTS BY MARDI**

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**GM Rice: A serious risk for Malaysia**

The National Biosafety Board (NBB) is currently assessing an application to conduct a confined field trial for genetically modified (GM) rice, submitted by the Malaysian Agricultural Research and Development Institute (MARDI). The GM rice has been genetically engineered to be resistant to the herbicide glyphosate, as well as to rice disease caused by bacteria and fungi.

This application, which is for environmental release of GM rice as part of a confined field trial, already raises serious biosafety concerns for both people and the environment. While this application is a first step, it could be a matter of time before further development in large-scale field trials or commercialisation occurs, which raises further serious risks for Malaysia, also outlined below.

**1. GM rice threatens Malaysia as a centre of genetic diversity for rice**

Malaysia is a centre of genetic diversity for rice. Any introduction of GM rice via field trials or commercial release jeopardises not only the biodiversity of rice species in Malaysia, but also in the wider region.

Centres of genetic diversity are of critical importance for current and future crop improvement efforts as they harbour major parts of the genetic diversity of a given species' gene pool. Adaptation and selection processes in crop gene pools are on-going in these centres, especially in traditional agricultural production systems, where farmers continue to play an important role in the management and maintenance of this genetic diversity. The genetic diversity is also critical to generating on-farm resilience, an issue made more urgent by the challenges of climate change.

Malaysian cultivar MR219 appears to be the parental variety that has been modified, a variety that is famous for its better yield and long and fine grain quality. Genetic engineering has the potential to alter its unique qualities, unnecessarily compromising the famed quality of this cultivar.

**2. Field trials risk contamination of wild relatives and conventional varieties of rice**

Any environmental release either by field trials or commercial release risks genetic contamination of wild relatives of rice and conventional varieties with transgenic material, compromising rice biodiversity in the region and jeopardising rice export markets.

While developers claim that field trials have measures in place to contain and prevent gene flow escapes into the environment, contamination of non-GM varieties is well documented, including from field trials. Indeed, according to the GM Contamination Register, as of 2014 rice has the highest

number of contamination events, despite there being no commercial GM rice grown anywhere in the world.

### **3. Genetic engineering is an inherently unpredictable process associated with unintended effects**

Unintended effects are associated with the genetic engineering process. Indeed, there is no scientific consensus on GMO safety and independent studies have repeatedly revealed unintended effects in GM crops. For example, recent studies have detected altered metabolite levels in glyphosate tolerant rice and maize varieties. The maize line had significant increases in compounds that may be toxic to people in certain contexts. Other peer-reviewed studies have shown toxic effects following feeding trials with GM crops.

The inclusion of a gene to confer fungal resistance in this GM rice also raises concerns, as this gene encodes for a protein that regulates gene expression. This introduces the possibility that the expression of numerous genes may be unintentionally altered, with potential consequences for food safety, such as disrupted nutritional, allergenic or toxin profiles; or altered agronomic properties that may compromise the high yielding properties of MR219 rice.

### **4. Biosafety data lacking for GM MR219 rice**

There is very little information on this specific GM rice variety. No details appear to be publicly available at the molecular level to ensure that the genetic modification has not caused any unintended effects, which is crucial to ascertain safety, particularly for rice, a staple crop in Malaysia and the wider region.

There also appears to be no toxicological data to show a lack of unintended effects and whether this has compromised the safety of this rice variety for human consumption; or on potential toxicity to non-target organisms. Similarly, no information appears available on unintended effects at the agronomic level that may risk farmer livelihoods following contamination from a field trial, or commercial release.

**With rice being a staple crop and staple food that is consumed in high quantities every day in Malaysia, GM rice presents biosafety risks to people and other non-target organisms that currently remain unanswered. There is a complete lack of data to prove safety of this product. Absent such proof, no GM rice should be approved in Malaysia.**

### **5. Glyphosate-tolerant crop cultivation leads to increased glyphosate use**

The promotion of herbicide-tolerant GM crops, such as this GM rice, is unsustainable at a time of severe biodiversity loss and climate crisis. By design, herbicide tolerant GM crops lead to increased herbicide use, with resulting health and environmental impacts, and this has been confirmed by evidence from countries that are growing such crops. Glyphosate is now practically ubiquitous in the environment in countries that widely grow glyphosate-tolerant crops, detected in rain samples, rivers, streams, lakes, soil, sediment, ditches, drains and groundwater. Glyphosate has also been detected in human bodies, where it potentially bio-accumulates. Any use of glyphosate on rice paddies raises concerns for leaching of glyphosate into freshwater supplies destined for drinking water in Malaysia.

## **6. Glyphosate associated with serious human health effects and environmental toxicity**

Glyphosate is increasingly widely linked to serious and lethal toxic effects including cancers and birth defects, with several national and regional bans being implemented as a result. The World Health Organization's International Agency for Research in Cancer has concluded that glyphosate is probably carcinogenic to humans.

Glyphosate toxicity has been widely documented in both independent and industry data. Most recently Bayer, which bought over Monsanto, lost three high profile court cases in the US for not warning of the cancer risks of glyphosate herbicides that had resulted in people suffering from non-Hodgkin Lymphoma. 13,000 further cases are pending and it is now estimated that Bayer could be liable to pay US\$ 30 billion in compensation. Cancer rates are also significantly higher than the national average in GM herbicide-tolerant crop growing regions of Argentina. People in those areas are also suffering from high rates of birth defects and reproductive toxicity, consistent with findings from both independent and industry laboratory studies. Legally permitted very low doses have also been shown to cause liver disease in laboratory animals.

Glyphosate toxicity to wildlife is also well-documented. Many species, including aquatic organisms, reptiles, beneficial soil organisms including certain microbes and worms, have been shown in scientific studies to be affected by glyphosate exposure.

## **7. If glyphosate-tolerant crops are approved for commercial cultivation, they will likely be ineffective over the long term**

Glyphosate-tolerant GM crops are increasingly futile and do not present a sustainable agricultural solution to weed control. The spread of glyphosate-resistant weeds is increasingly compromising the effectiveness of glyphosate-tolerant crops. There are now a reported 43 species of glyphosate-resistant weeds, up from 23 in 2014, as recorded by the Weed Science organisation in the US.

As a result of increasing ineffectiveness, the US has seen the approval of GM crops tolerant to multiple herbicides, as well as the increased use of alternative herbicides. This exemplifies the short-term effectiveness of the herbicide-tolerant crop strategy for weed control, and forewarns a likely increase in chemical use that would result from any commercialisation of glyphosate-tolerant GM rice in Malaysia. Any field trial conducted in Malaysia will be unable to test such limitations and long-term efficacy of MR219 glyphosate tolerant GM rice.

**Conclusion: Given the above concerns, we opposed to any field trial release of this GM rice. We strongly urge the NBB not to approve this application.**

**This statement has been supported by;**

1. Persatuan Pengguna Pulau Pinang (CAP)
2. Sahabat Alam Malaysia (SAM)
3. IDRIS Association
4. Persatuan Agroekologi Malaysia SRI-Mas
5. Pertubuhan Persaudaraan Pesawah Malaysia (PeSAWAH)
6. Parti Sosialis Malaysia
7. Pertubuhan Aktivis Pengupayaan Insan (API)
8. Persatuan Aktivis Sahabat Alam - KUASA
9. Majlis Tindakan Ekonomi Melayu (MTEM)
10. OAM Organic Alliance Malaysia
11. Persatuan Niagakawi Langkawi

12. Persatuan Usahawan Tani Cinta Alam Kelantan (PUNCAK)
13. Pertubuhan Alam Sekitar Sejahtera Malaysia (GRASS Malaysia)
14. Sustainable Development Network Malaysia (SUSDEN)
15. Persatuan Pendidikan Dan Kebajikan Jaringan Nelayan Pantai Malaysia (JARING)
16. MiM Humanitarian Project
17. Badan Bertindak Pesawah MADA
18. Padi Rescue
19. TERAS Pengupayaan Melayu
20. Majlis Perundingan Islam Malaysia (MAPIM )
21. Persatuan Peduli Dhuaafa dan Pengupayaan Masyarakat
22. Angkatan Gerak Minda Malaysia (AGRA)
23. Penang Inshore Fishermen Welfare Association (PIFWA)
24. Jaringan Kampung Orang Asli Semenanjung Malaysia (JKOASM)
25. Pesticide Action Network, Asia and the Pacific (PANAP)
26. North South Initiative
27. Third World Network
28. Persatuan Penanam Padi Daerah Rompin
29. Klima Action Malaysia (KAMY)
30. Rakan Membangun Masyarakat (PACOS)
31. Aliran Kesedaran Negara (ALIRAN)
32. Persatuan Iban Marudi, Baram Sarawak (PIMB)
33. Persatuan penduduk Kampung Long Luyim, Sg.Pelutan Baram (PPKLLSPB)
34. Persatuan Penduduk Kampung Sungai Peking Tinjar (PPSPT)
35. Persatuan Penduduk Rumah Sengok Sg Binyok Pandan Sebauh Bintulu (PPRSBPSB)
36. Persatuan Penduduk Kampung Long Miri Baram (PPKLMB)
37. Persatuan Penduduk Kampung Sg Senga Sebauh Bintulu Sarawak (PPKSS)
38. Persatuan Penduduk Sungai Buri Bakong Marudi (PPSBBM)
39. Persatuan Penduduk kampung Long Pilah Telang Usan Miri (PPKLPTUM)
40. Persatuan Penduduk Kampung Long Tepen, Pelutan Baram (PPKLTPB)
41. Persatuan Penduduk Kampung long Daloh Sg Patah Baram (PPKLDSPB)
42. Persatuan Penduduk Sg Malikat Marudi Baram (PPSMMB)
43. Persatuan Penduduk Rumah Labang Nanga Seridan Tinjar Beluru Miri (PPRLNSTBM)
44. Persatuan Penduduk Rumah Lachi Anak Bikang Sebatuk Baru, Suai Niah
45. Persatuan Penduduk Sungai Tarak, Lubok Amam, Marudi (PPSTLA)
46. Persatuan Penduduk Kampung Uma Bawang
47. Persatuan Penduduk Sungai Linei Tutoh
48. Persatuan Penduduk Sungai Satai Bintulu
49. Persatuan Melayu Marudi (PMM)
50. WWF Malaysia
51. Agora Society Malaysia
52. Koperasi Petani Tambatuon (KOPETA)
53. Persatuan Usahawan Organik Kelantan.
54. Persatuan pengusaha padi wangi Kelantan

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