



**BASF**

We create chemistry

## MOVING FORWARD WITH FARMING – THE BIGGEST JOB ON EARTH

### Let's move forward together

While farming is the biggest job on earth, farmers are not facing the challenge alone. We support productive, sustainable agriculture, allowing farmers to protect the land they hold in trust for future generations while meeting the demands of modern society.

We pledge to:

- Invest in the right solutions to enable farmers to grow more quality food, more efficiently.
- Share our expertise to help farmers to make a better life for themselves and their communities.
- Never compromise on safety to allow farmers work in a safe environment and produce safe, healthy food.

In everything we do, we will play our part in leaving a positive environmental inheritance.

We stand shoulder to shoulder with farmers. Together, we will move forward on our journey.

## BASF Clearfield® Production System

Increasing yields and efficiencies for rice farmers

### ■ Solving problems for farmers

We are aiming at solving real problems that farmers encounter. Take Malaysia, for example, where rice is a staple food but the country is not yet self-sufficient in rice production and is forced to import the foodstuff. As there is little opportunity to allocate more land for growing rice, BASF's focus is very much on helping farmers to increase their yields and become more productive.

To achieve that goal, BASF collaborates with the Malaysian Agricultural Research and Development Institute (MARDI), which was set up to advance the food and agricultural industries with a particular focus on new technologies. MARDI is managed and guided by the regulations and policies set by the MARDI Governing Board with the consent of the Minister of Agriculture and Agro-Based Industry.

After switching to the BASF Clearfield® system, Malaysian rice growers who previously harvested four tons per hectare began reporting 10-ton yields. The Malaysian Agricultural Research and Development Institute believes that this yield increase is due to Clearfield®, which provides outstanding weed control, shorter growing time, superior plant vigor, and improved plant health.

### ■ Effective weed control

Importantly, Clearfield® allows farmers to eliminate wild weedy rice, a similar-looking species to domestic rice but which does not produce an edible grain. To put the problem in context, 95% of farmers report weed infestations in their fields every season and weedy rice is estimated to affect 10% of total production worldwide. Traditionally farmers had to try and control this problem by hand-weeding, a hugely time intensive exercise.

Controlling weedy rice with Clearfield® means lower production costs, increased yield potential and improved crop quality. All good news for the farmer!

# Did you know?

## Rice production in Asia

Malaysia only produces

**80 %**  
of its domestic requirements

Weedy rice accounts for

**50 %**  
of yield losses

Around

# 2 m

metric tons of rice are produced each year in Malaysia

The average Malaysian citizen consumes

**82.3 kgs**   
of rice per year

**90 %**

of all rice produced worldwide is consumed in Asia

Weedy rice has many names throughout Asia:

- China: **Lutao**
- Bangladesh: **Jhora Dhan**
- Japan: **Akamai**
- Korea: **Sharei**
- Laos: **Pa**
- Malaysia: **Padi Angin**
- Thailand: **Khao Nok**
- Vietnam: **Lua Lon**

The current demand of 524 million tonnes is expected to increase to over

**700 m**  
tonnes by 2025

### Easy to use

Clearfield® is also easy for farmers to use. With one single herbicide application, it provides effective, season-long weed control. This reduces the overall amount of herbicides used, which is an important factor in managing weed resistance across all crops.

### How Clearfield® works

Around seven days after sowing the herbicide-tolerant rice variety, the farmer farmer applies the herbicide to the rice crop when the soil is saturated (wet but not flooded). The herbicide OnDuty™ controls weedy rice (Padi Angin), as well as most persistent and common rice weeds.

At some point 10 to 14 days after the herbicide has been applied, the weeds wilt and die. Since the rice seeds are herbicide-tolerant, the rice plant itself stays healthy.

“Rice is a staple food in Malaysia. Our goal is to be self-sufficient in this crop.”

Robert Yim,  
Malaysian Farming Consultant

### Recognised worldwide as non GMO

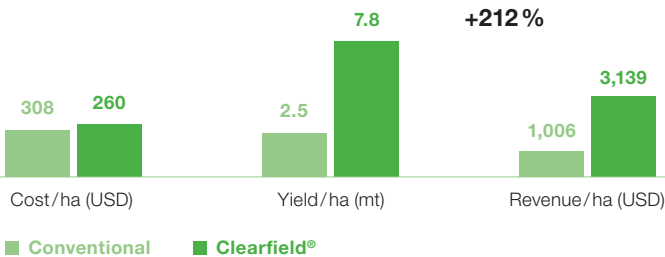
Clearfield® is recognized as non-GMO or non-transgenic by international authorities. This provides farmers with an effective tool that is accepted by global markets.

Over 100,000 Malaysian farmers are currently using the Clearfield® Production System. To control the menace of weedy rice, these numbers are set to rise to over 500,000.



### Cost, Yield & Revenue Analysis

(Hj Mohd Saad Bin Saat)



**Before Clearfield® S2/2010:**  
2,500 kg per hectare

**After Clearfield® S2/2011:**  
7,500 kg per hectare



Hj Mohd Saad Bin Saat

### Further success stories from farmers

**Before Clearfield® S2/2011:**  
4,200 kg per hectare

**Before Clearfield® S2/2011:**  
3,490 kg per hectare

**After Clearfield® S1/2012:**  
8,750 kg per hectare

**After Clearfield® S1/2012:**  
7,610 kg per hectare

Rice field 1.0 relong  
(0.285 ha) Yan, Kedah

Rice field 4.5 relong  
(1.29 ha) Bintong, Perlis

Nordin Bin Salleh



Tuan Hj Sudin Noor



## CONTACTS

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In Malaysia, a relong is a unit of land area = 30,976 square feet, approximately 2,870 square meters (approximately 0.7111 acres).