

# Success Stories

Combining agricultural insights and enhanced product performance to achieve excellence in the field





# Content

Our success stories are grouped in 2 categories:

## **Creative use of technology**

Unconventional use of product, compound, Active Ingredient or technology; R&D breakthrough.

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## **Connecting the dots**

Demonstrated ability to point out new opportunities based on insight into the needs and dynamics of the agricultural value chain.

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## **Connecting AgCelence® product performance to greater value!**

AgCelence® identifies a strong family of products, which bring great value from reliable and proven performance beyond crop protection.

AgCelence® products often produce great stories which demonstrate totally new approaches to value creation. In this brochure, the most important and interesting stories are collected to give a deeper insight into the world of AgCelence®.



A field of yellow flowers, likely rapeseed, under a clear blue sky. A green rectangular overlay is positioned on the right side of the image, containing the number '01' and a question about AgCelence products.

# 01

What if AgCelence® products could double yield in extreme climate conditions?

## White night effect

# Observation

Extreme climate conditions such as long summer days in Northern Russia are disrupting rapeseed growth and making it jump from one growth stage to another too quickly which lowers the potential yield.

# Solution

The use of AgCelence® products shortens and thickens the main stem as well as stimulates rooting which leads to a slower and more gradual development of the plant resulting in higher yield.

## Our AgCelence® way of thinking

Not every AgCelence® effect is a global phenomenon, but it can matter a great deal to certain growers in a local market. Our country teams are the eyes and ears for potential AgCelence® innovation.

# Context

Growth and development of summer rapeseed occurs during spring and summer conditions, which are characterized by increased sun insolation, long daylight (shorter nights), higher air temperature and uneven precipitation pattern. In Northern Russia the so-called “white nights effect” occurs: when the sunlight day is longer than 14 hours, rapeseed starts to quickly jump from one development stage to another and develops uneven and too fast, which means that less side branches develop and less productive pods ripen.

As a result, the crop loses potential yield. Using AgCelence® products, BASF Russia conducted big scale farm trials and practical in-field tests with the All-Russian Rapeseed Institute: the results have shown that AgCelence® products reduce this “white nights effect” through shortening and thickening of the main stem, stimulating side branch development and rooting as well as breaking down the development speed of the plant. This leads to slower and more gradual plant growth ensuring that rapeseed realizes its full yield potential in extreme climate conditions.

**Product:** Caramba®

**Country:** Russia

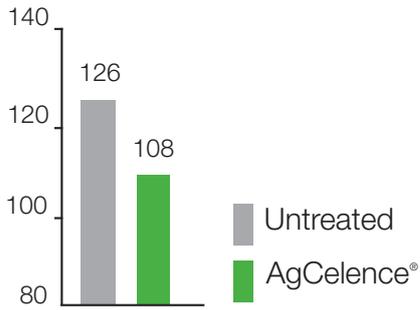
**Especially interesting for:**

Farmers in Belarus, Kazakhstan, Baltics

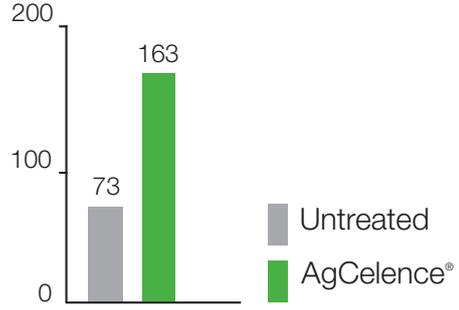


# Proof Points

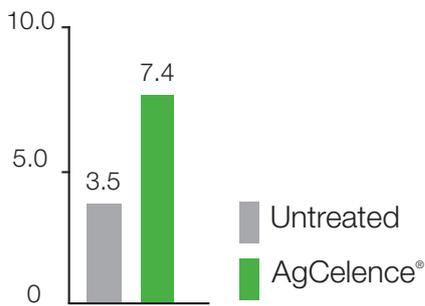
Average plant height (cm)



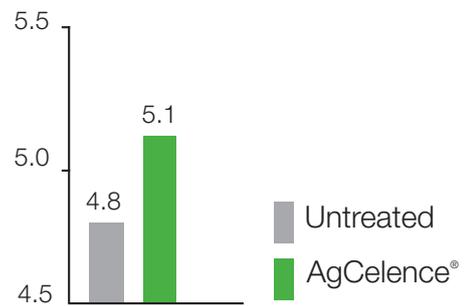
Number of pods



Average additional shoots

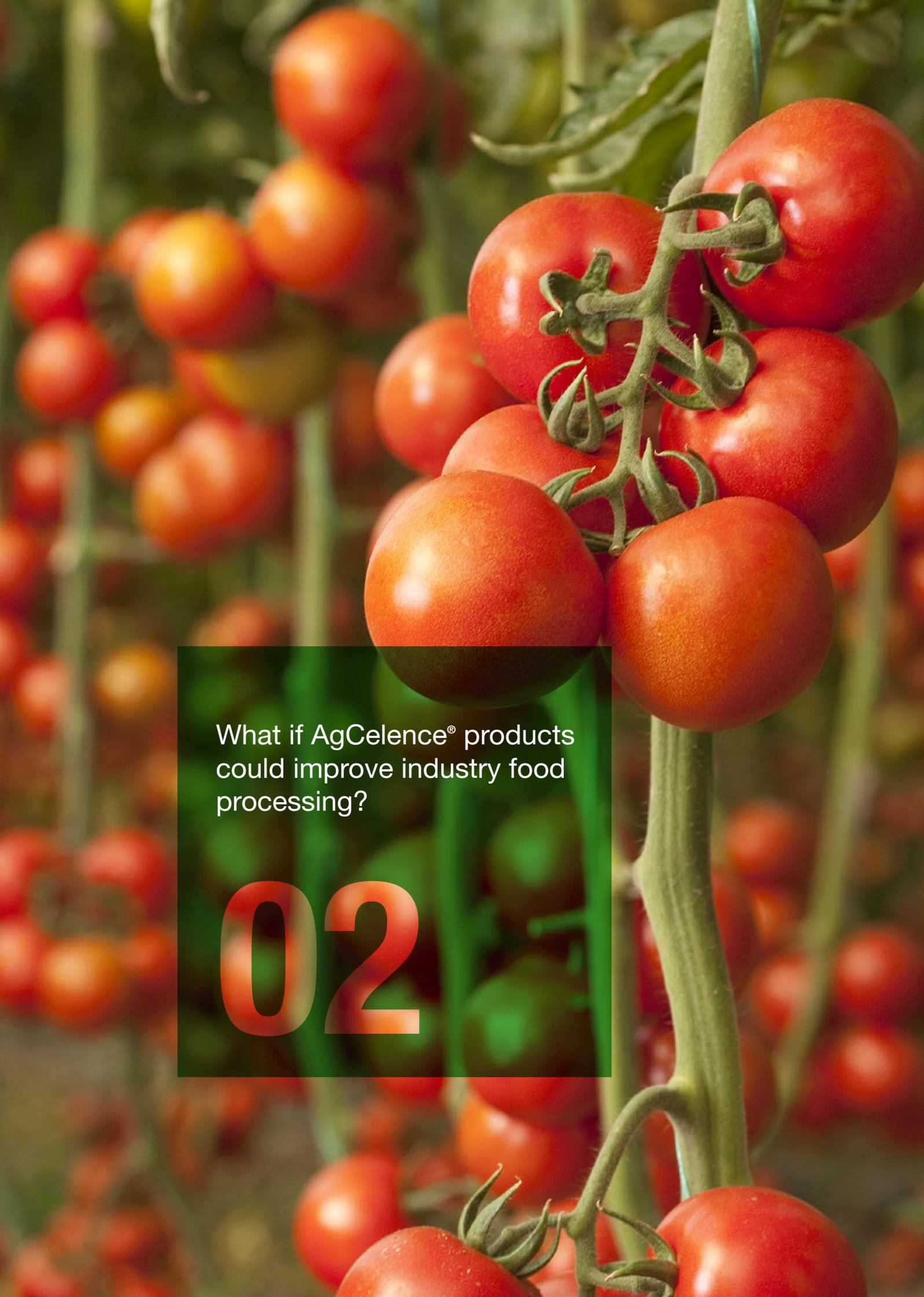


Weight of 1000 seeds (g)



» After the AgCelence® product treatment the plants became notably stronger, started to branch and the pods acquired saturated green coloring. This influenced the OSR yield amounting to 24 dt/ha «





What if AgCelence® products  
could improve industry food  
processing?

02

## Tomato Brix content

# Observation

The sugar content in tomatoes is a crucial factor for food processing companies such as Unilever, which is able to save nearly USD 0.5 Million in their industry process for each 0.1° Brix increase.

# Solution

The use of AgCelence® products in tomato increases photosynthesis causing the plant to produce more energy and thus higher quantity of sugar content, which subsequently boosts the crops' marketable quality.

## Our AgCelence® way of thinking

With AgCelence® we look beyond what happens on the field. We look for additional sources of value on behalf of growers in their own value chain.

# Context

Big players in the processing industry are willing to pay farmers a premium for tomatoes that are rich in sugar content (i.e. have a high Brix value). In tomato plants the hormone ethylene normally causes the natural ripening process, but when crops are under stress, this process can be triggered too early. Premature ripening reduces the greenness of the leaves and in turn prevents the plants' photosynthetic activity that gives it energy to create sugar content. A serious concern for tomato farmers.

AgCelence® products deliver remarkably better stress management, which is clearly evident from the plants' greener leaves. While ethylene is reduced, the photosynthetic activity is stimulated and more energy created which is the source to establish higher sugar content. Simultaneously, the increased energy significantly improves the number and weight of tomatoes per plant, leading to higher returns per hectare. Altogether, this enables the farmer to compete in the global market place with higher volumes and better quality tomatoes. Trial results have shown Brix content increase up to 12% following the AgCelence® product treatment. A strong benefit for the entire food value chain.

**Product:** Cabrio® Top, Cantus®

**Country:** Spain

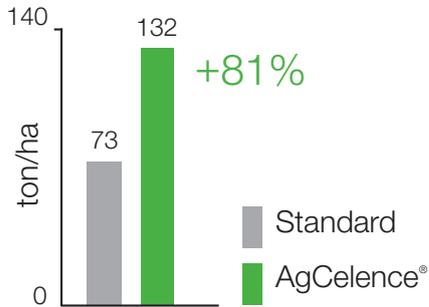
**Especially interesting for:**

Farmers in Europe, South America and Asia

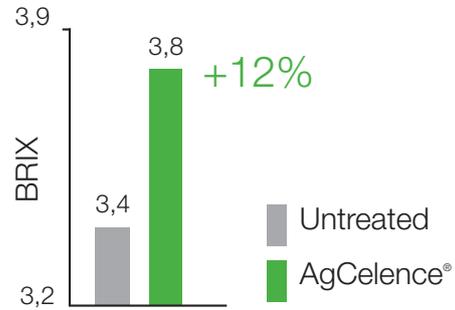


# Proof Points

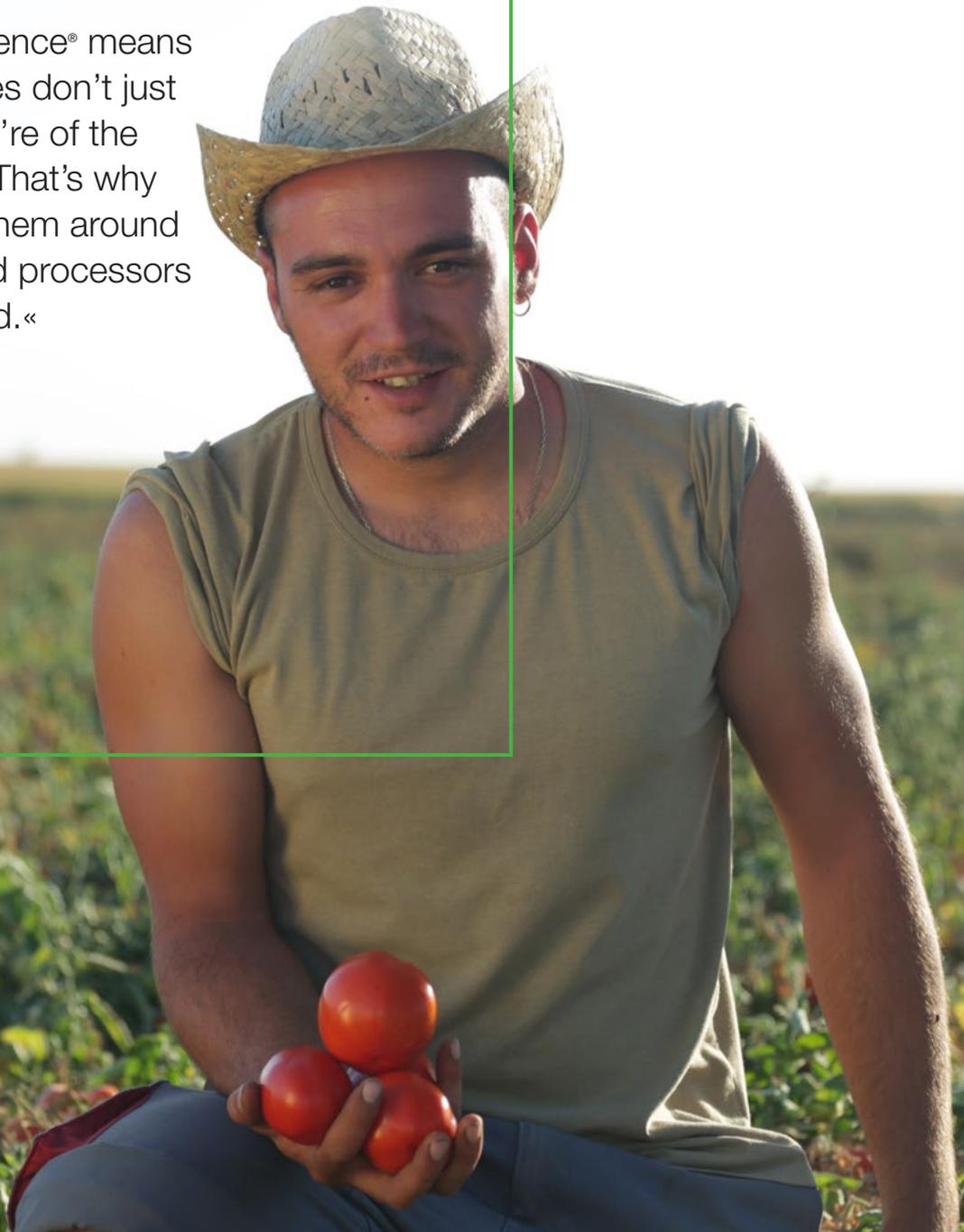
Yield evaluation, hybrid H 3402  
BASF Trials, Goiania (Brazil), 2007



Quality evaluation, hybrid H 9553  
BASF Trials, Patrocínio - MG (Brazil), 2006



» For me, AgCelence® means that my tomatoes don't just look good. They're of the highest quality. That's why I don't just sell them around here, but to food processors around the world.«





03

What if AgCelence® products  
could grow market potential  
with exports around the world?

## Grape shelf life

# Observation

Fruit growers are competing on a global scale. However, distant shipments can be a complex and risky factor in the transportation process causing unacceptable fruit quality at arrival in the export market.

# Solution

The pre-harvest application of AgCelence® products protects crops during long transportation and maintains healthier fruits.

# Context

Demand for high quality fruits regardless of the season has increased global competition for grape growers. A major challenge for farmers is to maintain quality fruit and avoid waste during long shipment periods that last up to 60 days. A critical factor for consumers is the visual appeal when making their purchase decision and too often fruit loses its color and dries out during the journey. This is unacceptable for consumers.

Treating grapes with AgCelence® products during pre-harvest has shown a clear advantage in the quality of the crops that reach the export markets. The plant stem remains fresh and the grapes keep a greener and superior color in comparison to grapes treated with standard products. For grape growers in Chile, pre-harvest application of AgCelence® products enables them to ship superior quality grapes even to Asian markets. With minimal waste during transportation they maintain competitive pricing and multiply their market potential.

## Our AgCelence® way of thinking

AgCelence® effects have no geographic boundaries. We are looking at the global food chain and let these insights enter our AgCelence® product development.

**Product:** Bellis®

**Country:** Chile

**Especially interesting for:**

Farmers in South America



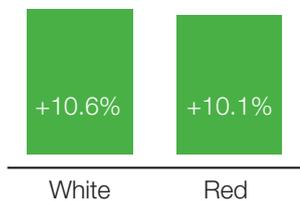


» Our data show a clear advantage in crops treated with AgCelence® indicating superior color quality upon arrival in distant export markets.«

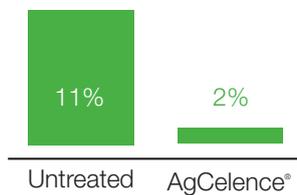
# Proof Points



Higher cluster weight thanks to AgCelence®



82% less cracking defects thanks to AgCelence®



Reduced shattering thanks to AgCelence®



# 04

What if AgCelence®  
products could increase  
harvesting speed?

## Harvester speed

# Observation

Lodged corn is a common challenge for farmers as it decreases yield and makes harvesting a time intensive job.

# Solution

Applying AgCelence® products in corn improves stalk strength and reduces lodging which results in easier and faster harvesting that can lead to significant cost savings.

## Our AgCelence® way of thinking

Innovation may just “walk in the door” with your next customer who tells you something new about your own product. AgCelence® is all about listening to and working with farmers.

# Context

In Canada, corn growers experienced the AgCelence® effect visually on the field and physically when harvesting their crop. Together with BASF they analyzed the effect and found that AgCelence® treated corn grows stronger and is more resistant to lodging. Apart from the ability to harvest more yield they discovered an additional benefit that growers did not expect. Under previous circumstances the lodged corn would block the harvester when driving through the field. With AgCelence® the stronger plants grow straight and aligned which makes them easier to harvest and enables a significant increase in harvesting speed.

On an AgCelence® treated field a harvester is able to accelerate from 3 MPH to 5 MPH leading to multiple benefits. Growers with a 1000 acre field on average benefit from saving 55 harvesting hours which not only reduces working time but also saves labor cost, harvester rent, lowers fuel cost and reduces CO2 emissions. Altogether, using AgCelence® products on a 1,000 acre corn field results in over USD 21,000 cost savings, a strong benefit farmers did not expect.

**Product:** Headline®

**Country:** Canada

**Especially interesting for:** Markets with modern machinery

**Similar values can be experienced in:**

Corn in U.S.A., Cotton in India



» Using AgCelence® products I can cut harvest time by 55 hours and save 40% on operational cost.«



# Proof Points

1,000 acres / 404.7 hectares



3 mph / 5 km/h

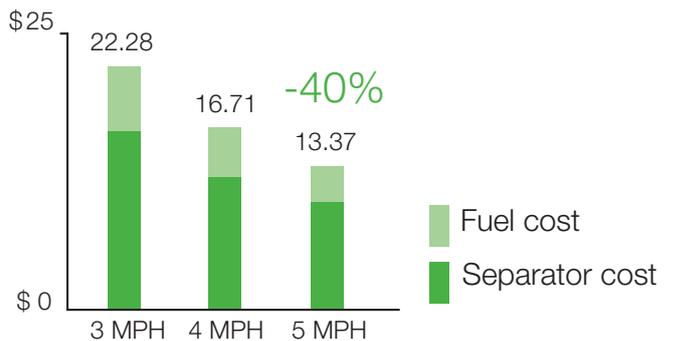
138 separator hrs.  
\$16,560  
1,930 gal. fuel  
\$5,790  
**\$22.28/acre**  
**14 days**



5 mph / 8 km/h **with AgCelence®**

83 separator hrs.  
\$9,960  
1,160 gal. fuel  
\$3,480  
**\$13.37/acre**  
**8.5 days**

Operating cost per acre





What if AgCelence® products could improve farm efficiency and quality of livestock feed?

05

## Silage consistency

# Observation

It is challenging for livestock farmers to harvest maize at the right time to optimize quality of cobs combined with the right size of green leaves to process into well structured silage.

# Solution

The application of AgCelence® products in corn ensures reliable growth of greener plants that enables uniform chop size, creating better silage structure and improved storage stability, which eventually leads to more consistent and predictable quality of livestock feed.

## Our AgCelence® way of thinking

AgCelence® benefits are not always obvious. Sometimes they require a closer look, or a second thought to whom a plant health effect could be beneficial.

# Context

Livestock farmers require the best quality and most cost efficient feed for their livestock. Maize is an important part of cows' diet and for farmers it can be challenging to find the right harvesting moment at which they can assure high cob quality combined with the optimal size of green leaves which are necessary to prepare the optimal silage structure.

The application of AgCelence® products helps the plants stay greener for longer and give farmers more flexibility in harvesting. This enables the cobs to fully develop, grow bigger and create a higher percentage of dry-matter and energy contents that improve the feed quality. The green leaves grow in more consistent sizes which enables the harvester to cut them in uniform chop sizes and thus improve the quality and storage stability of the silage.

Finally, greater yield and increased fresh matter per hectare enables the farmer to save space for cash crops. Altogether, the AgCelence® effect for livestock farmers results in improved efficiency and higher quality feed for livestock.

**Product:** Opera®

**Country:** Denmark

**Especially interesting for:**

Farmers in South America and Europe

**Similar values can be experienced in:**

Livestock in Costa Rica



# Proof Points

	Kg DM*/ha	FU/ha	Kg DM/FU**	Add. FU/ha	Add. Value €/ha
Untreated	12,870	11,094	1.16	-	-
AgCelence®	14,750	13,053	1.13	1,959	274

\*DM = Dry Matter; \*\*FU = Feeding Unit

1 Scandinavian FU = net energy value in 1 kg barley at 85% DM

1 Danish FU = 14€cent (1.05Dkr) in production of maize, VFL Budgetkalkulen

» I focus on full development of the cobs for maximum starch and energy for my cows.

It's bringing me flexibility for harvest, and even better structure of silage «





What if AgCelence® could  
enable countries to grow  
enough food to feed their  
entire population?

06

## Solving big challenges for society as a whole

# Observation

Some countries, like Indonesia are depending on food imports and are not entirely self-sufficient when it comes to growing essential crops such as rice. Therefore, there is a strong need for more efficient farming practices.

# Solution

Innovation in growing techniques contributes to higher efficiency, enabling farmers to grow more and higher quality crops, improving the livelihood of farmers and consumers alike, and ultimately helping the entire country to become self-sufficient in the production of key crops.

## Our AgCelence® way of thinking

AgCelence® is bigger than just one product. Applied to the right context, with foresight and imagination, it can play an integral part in the solution of major agronomic challenges.

# Context

With a growing world population the demand for essential crops such as rice is outgrowing the offer. Some countries like Indonesia are already dependent on imports from abroad. Indonesia recognizes this problem and has set itself the goal to produce enough rice to feed its growing population. Leading Indonesian rice experts and BASF specialists believe that innovation in rice growing techniques such as AgCelence® will contribute to improve crop quality and increase yields that are needed to produce enough rice. Educating farmers can be a challenge as Indonesia is home to a large number of farmers operating on a small scale. To reach them, BASF collaborates with education programs such as Mitra Tani AgCelence®, Farmers Field School and Farmers Meeting.

Farmers learn how AgCelence® can increase yield and crop quality and BASF offers tailor-made formulations for rice farmers. These formulations allow for high tech controlled Active Ingredients release with delayed and very limited affect on paddy water. Altogether, AgCelence® improves the livelihood of farmers and fosters a healthy environment while empowering the nation to become independent from rice imports.

**Product:** Seltima®

**Country:** Indonesia

**Especially interesting for:**

Farmers in Asia, South America and Europe

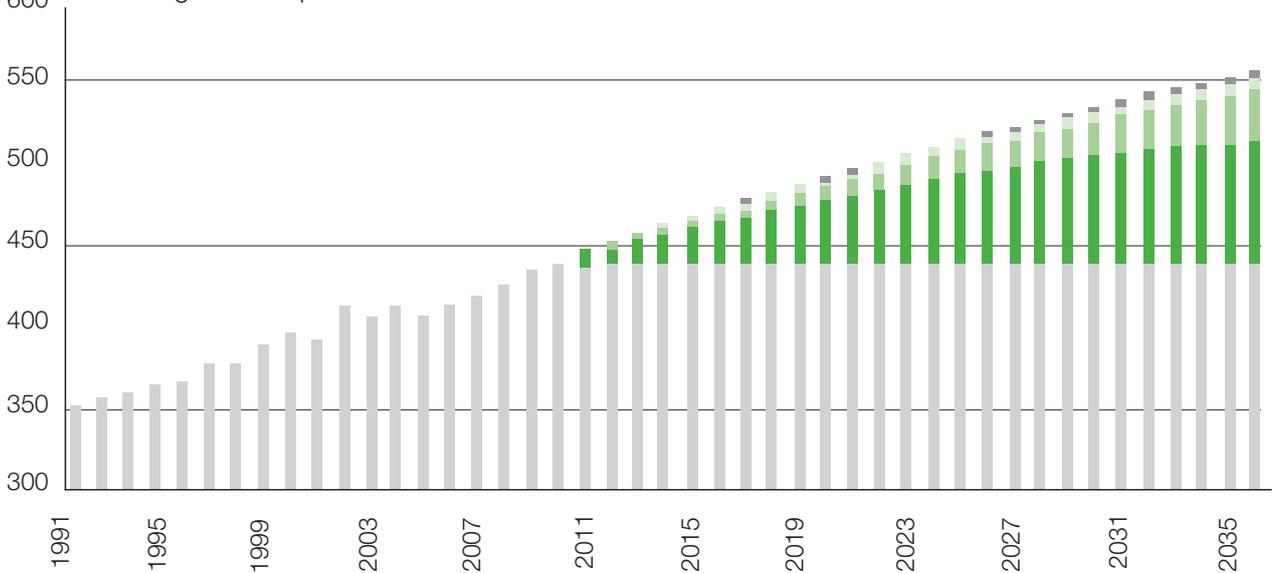




» With AgCelence® I can count on bigger yields and higher quality produce. «

# Proof Points

2010 global rice production



Additional rice needed:  
116 million tons by 2035

■ Asia ■ Africa ■ America ■ Rest of World



What will be our next success story?  
Looking forward to your contribution.

Global Brand Management &  
Marketing Communications AgCelence®  
[info-agcelence@basf.com](mailto:info-agcelence@basf.com)



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