

Regalis® Plus

Take the plus and get more than you expect.



We create chemistry



AgCelence®

Expect more

Regalis® Plus is a:

- ✓ Growth regulator
- ✓ Yield manager
- ✓ Plant strengthener

Have you given yourself the AgCelence® advantage?



NOU!
GAAN ONS BOER™

Regalis® Reg. No. L7549, Act No. 36 of 1947. Active ingredients: Prohexadione-calcium 100 g/kg • Regalis® Plus Reg. No. L10535, Act No. 36 of 1947.

Active ingredients: Prohexadione-calcium 100 g/kg. • Please refer to the product label for instructions for use.

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An apple a day keeps the doctor away!

In various cultures, apples are the most popular fruit. This is reflected in the 35 000 varieties produced in the world. South Africa produces more than 10 varieties. The Dutch consume as much as 50 kg per capita annually. However, apples are not only of interest to connoisseurs and fruit producers. Increasingly, specialists are taking an interest in their health-giving properties. Tests show that apples are versatile and one of the most healthy foods known to man. This is not only due to the recently discovered antioxidants, which are vital to maintain good health, but apples have been shown to have prophylactic properties against many diseases, and to help cure some of them.

Did you know?

- Apples are a source of vitamins, especially vitamin C
- They are important for the healthy development of bones



- They help to maintain the effectiveness of the brain and reduce the risk of diseases such as Parkinson's or Alzheimer's
- One apple can disinfect gums and clean teeth
- They promote lung function, help in cases of asthma, and thanks to the antioxidants, they can reduce the risk of lung cancer
- They assist with proper functioning of the urinary system and reduce the risk of prostate cancer in men
- No other fruit contains as much pectin, which protects the body against the spread of dangerous micro-organisms and aids in the functioning of the gastrointestinal tract as well as in the removal of toxins from the body
- They are prophylactic against diabetes in that they contain fructose rather than unhealthy sucrose
- They contain over 20 beneficial minerals such as calcium, phosphorus, iron and magnesium
- They help the body fight diseases of the digestive tract such as colitis or peptic ulcers
- They reduce the level of cholesterol in the blood, and thanks to the flavonoids and a high level of potassium, they reduce the risk of cardiovascular diseases

How does BASF meet the producer's expectations?

- Ten years ago, BASF first offered its producers Regalis®, an innovative plant growth regulator
- In recent years, Regalis® from BASF, has evolved into one of the products of choice in modern fruit farming
- Successful commercial fruit producers aim to cultivate trees that balance vegetative growth and fruit yield. Regalis® is a bioregulator offering apple growers this level of precision for modern apple production
- Now, BASF is introducing an improved formulation, namely Regalis® Plus

The consumer's expectations towards apples are growing. People want to buy healthy and fresh-looking apples of good quality. This is a big challenge for apple producers, however, BASF works very hard – using the latest know-how and expertise – to provide producers with tailor-made solutions so that they can meet these expectations.



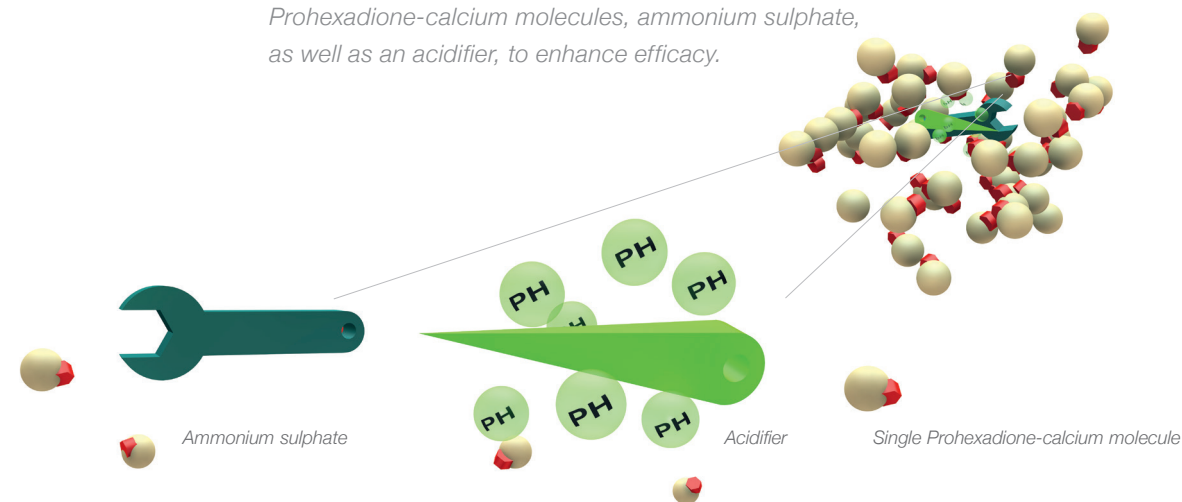
Regalis® Plus What's new?

It is well-known that tank mix additives, such as **water conditioners** or **acidifiers** could enhance the bio-efficacy of Prohexadione-calcium.

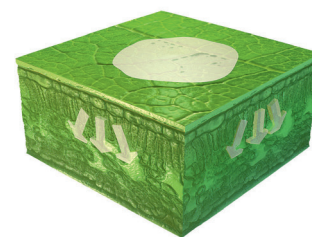
Regalis® Plus now contains a water conditioner and acidifier which help to form a reliable spray solution with less dependency on water quality.

Regalis® Plus allows efficient, fast and reliable uptake of the active ingredient into the leaves. Thus Regalis® Plus offers a higher application flexibility in terms of water quality and timing of application.

Each Regalis® Plus granule now contains many single Prohexadione-calcium molecules, ammonium sulphate, as well as an acidifier, to enhance efficacy.



1. The built-in **water conditioner**, ammonium sulphate, captures the Ca-ions from hard water as well as from Prohexadione-calcium.
2. The built-in **acidifier** reduces the pH in the water. This results into Prohexadione in acid form, which supports the solubility and effective uptake, since Prohexadione can only enter the plant tissue in dissolved form.



Regalis® Plus (Prohexadione in its acid form) is taken up more efficiently into the plant tissue.

How does Regalis® Plus work?

By introducing Regalis® Plus to your orchard, you will acquire more than just a growth regulator. Regalis® Plus is a growth regulator, yield manager and plant strengthener in one product. The active ingredient in Regalis® Plus, Prohexadione-calcium, inhibits gibberellin production and ethylene formation. Regalis® Plus also affects flavonoid metabolism in the plant.



Growth regulator

Reduction of longitudinal shoot growth is the most obvious effect of Regalis® Plus. Gibberellins are of paramount importance for shoot extension growth. Prohexadione-calcium blocks the biosynthesis of gibberellins, reducing levels of growth-active gibberellins, therefore, shoot growth is restricted.



Yield manager

Regalis® Plus can help to manage fruit quality traits in order to achieve production targets year after year. Prohexadione-calcium inhibits ethylene formation under stressful conditions that leads to better management of fruit quality.



Plant strengthener

The natural disease and pest resistance of trees is enhanced through the formation of new flavonoids in young shoots. Prohexadione-calcium enhances flavonoid metabolism, triggering natural defense mechanisms in the plant.



What are the benefits of Regalis® Plus for the producer?



Growth regulator

- Reduced shoot growth leads to a significant reduction of pruning costs, better light penetration, improved spray coverage and leaves also dry off more rapidly after rain
- Treated trees have an open canopy structure
- Energy of trees is directed into fruit production and not into vegetative growth



Yield manager

- High and stable yield in treated orchards
- Superior fruit sizes in treated orchards
- A positive effect on fruit colour for better quality export fruit



Plant strengthener

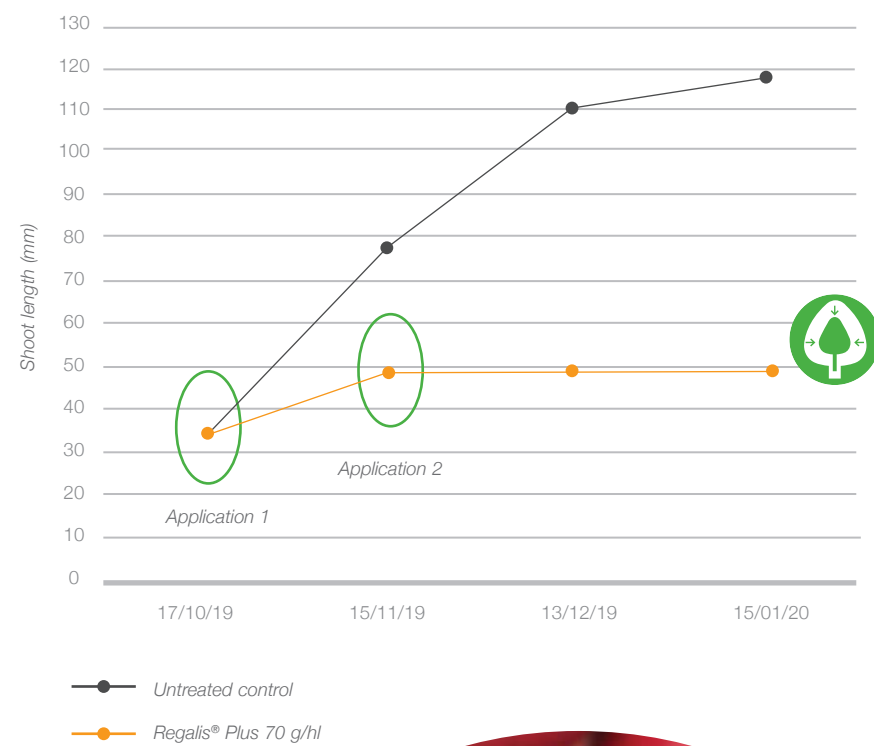
- Regalis® Plus helps trees to protect themselves against diseases and pests
- A possible decrease in apple scab and powdery mildew



- Regalis® Plus is relatively short lived in the plant and therefore will not produce residues in the fruit - effects will not be carried over into the following year
- Regalis® Plus is suitable for use in an Integrated Pest Management (IPM) system
- When used according to the instructions on the label, this product is safe to beneficials and is environmentally friendly in air, soil and water

The proof Regalis® Plus – Commercial trial results

Controls excessive vegetative growth (increase in shoot length).
Apples (Pink Lady) – Ideon Arnolds, Elgin Research farm,
Grabouw: 2019/20 season.



Regalis® Plus

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By introducing Regalis® Plus to your orchards, you acquire more than just a growth regulator. Regalis® Plus is a growth regulator, yield manager and a plant strengthener in one product.

Growth of new shoots is effectively curtailed just as they start to appear. The result? Dormant pruning is greatly reduced and summer pruning may not be required, resulting in savings in management time and labour costs.

The tree canopy is more open and accessible to light, and plant protection solutions can better reach their target. Because of this, fruit colour and quality are often improved.

As a yield regulator Regalis® Plus helps to achieve production targets year after year.

Regalis® Plus also triggers the natural defense mechanisms in treated trees. Trees are less attractive to insect pests and are less likely to be infected with pathogens.

Regalis® Plus fits perfectly into an integrated fruit production programme because of its favourable toxicological and eco-toxicological profile.

Regalis® Plus product profile	
Active ingredient	Prohexadione-calcium
Mode of action	Inhibits the biosynthesis of gibberellins responsible for shoot growth
Formulation	Water dispersible granules (WG)
Crop	Apples
Target	Vegetative shoot growth
Application rate	70 g/100 ℓ water
Number of applications	Two applications
Spray interval	Four weeks
Withholding period	56 days
Packaging	3.5 kg



Regalis® Plus uptake and mode of action

- Regalis® Plus is absorbed mainly through the leaves and is transported in the plant primarily acropetally via the xylem (upwards and outwards)
- From a whole tree point, the product is not systemic - the active will not be transferred from one shoot to another within a branch
- Greater humidity in the morning and evening increases absorption - uptake through the bark or roots is not a factor

Regalis® Plus: Degradation

- Residues in fruits are below the limit of detection when applied according to the label
- Relatively short lived with a half-life in the plant of 10 – 14 days – effect will not be carried over into the following year

Regalis® Plus: Integrated Pest Management

- Regalis® Plus is suitable for use in an Integrated Pest Management (IPM) system
- When used according to the instructions on the label, this product is safe to beneficials and environmentally friendly in air, soil and water

Regalis® Plus

Guidelines for efficient application

Dose rate and timing

- 70 g Regalis® Plus/100 ℓ water
- Withholding period: Apples 56 days
- Regalis® Plus must be applied at a minimum of 1,25 kg/ha
- Apply as a foliar spray when the terminal and lateral shoots reach 3 – 5 cm and 3 – 5 leaves are unfurled
- Repeat application four weeks after first application



1st application
3-5 cm shoot length



2nd application
One month later - early fruit set

Refer to the label for application guidelines.

Water quality

The built-in water conditioner and acidifier assist in fast uptake of Prohexadione into the leaves. The optimal range of acidification is between pH 3.5 – 5.5.



Mixing

1	2	3	4	5
Fill ¾ of the spray tank with water.	Remove sieve.	Gradually add the Regalis® Plus to the tank.	Put sieve back into tank.	Fill spray tank with water.
Start agitation	Maintain agitation	Maintain agitation	Maintain agitation	Maintain agitation



Regalis® Plus

Guidelines for efficient application

Water volume

- High volume (HV) application – The water volume applied per hectare is calculated according to the tree row volume (TRV) formula

Growth stage/application	% HV water required per ha
Pink bud stage – first application	80%
Four weeks later – second application	100%

- Low volume application – When the low volume (80%) Regalis® Plus application is done, the dose rate should be at least 1,25 kg/ha
- Use the formula on the label to calculate the dose rate of Regalis® Plus per hectare

General information

- Although Regalis® Plus is mainly absorbed through the leaves, a minimum leaf surface is required for sufficient uptake of the active ingredient
- Spray Regalis® Plus on strong-growing trees in accordance with the tree row volume formula and dose rates on the label
- The absorption of Regalis® Plus is limited by high temperatures, low relative humidity and strong wind
- Regalis® Plus requires four to eight hours for sufficient uptake, therefore, it is preferable to apply late afternoon or early morning

Rainfall

Should it rain within four hours after application, the application must be repeated.

Withholding period

- Allow 56 days between last application and harvest
- The treated orchard can be re-entered as soon as the spray deposit has dried, unless wearing protective clothing





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