The advantages of **BonDefense**

Hardly any virus symptoms

After an infection with mosaic virus (CGMMV*) the plants of BonDefense cucumber varieties continue to grow normally. No or hardly any virus symptoms occur in the plants or on the fruits, resulting in a better quality and production than in normal (susceptible) plants infected by this virus.

Slow multiplication

The virus multiplies more slowly in the plants than is the case in normal (susceptible) cucumber varieties. The concentration of the virus in the plant is, therefore, much lower which slows down the spread from plant to plant considerably.

*Cucumber Green Mottle Mosaic Virus

Differing degrees of specificity exist in the relations between plants and pests or pathogens. Identification of such specificity generally requires the use of highly elaborate analytical methods. Recognizing whether a plant is subject to a pest or pathogen or not may depend on the analytical method employed. It is important, in general, to stress that the specificity of pests or pathogens may vary over time and space, depends on environmental factors, and that new pest biotypes or new pathogen races capable of overcoming resistance may emerge.

Immunity: not subject to attack or infection by a specified pest or pathogen.

Resistance: the ability of a plant variety to restrict the growth and development of a specified pest or pathogen and/or the damage they cause when compared to susceptible plant varieties under similar environmental conditions and pest or pathogen pressure. Resistant varieties may exhibit some disease symptoms or damage under heavy pest or pathogen pressure.

Two levels of resistance are defined:

- *High/standard resistance (HR*):* plant varieties that highly restrict the growth and development of the specified pest or pathogen under normal pest or pathogen pressure when compared to susceptible varieties. These plant varieties may, however, exhibit some symptoms or damage under heavy pest or pathogen pressure.
- *Moderate/intermediate resistance (IR*):* plant varieties that restrict the growth and development of the specified pest or pathogen, but may exhibit a greater range of symptoms or damage compared to high/standard resistant varieties. Moderately/intermediately resistant plant varieties will still show less severe symptoms or damage than susceptible plant varieties when grown under similar environmental conditions and/or pest or pathogen pressure.

Susceptibility: is the inability of a plant variety to restrict the growth and development of a specified pest or pathogen.

- If in a resistance code of a certain variety reference is made to certain pest biotypes or pathogen races for which the resistance is claimed this means that no resistance is claimed to other biotypes or races of the same pest or pathogen.
- If in a resistance code no reference is made to pest biotypes or pathogen races for which the resistance is claimed this means that resistance is claimed only to certain not further specified pest biotypes or pathogen races.

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For more information about the resistance statement, we refer to the website www.rijkzwaan.com.
Inclusion of a variety in this edition does not automatically imply that such a variety is available for purposes of exploitation; it might be available for testing only. For more information, please contact Rijk Zwaan (www.rijkzwaan.com).
The pictures in this edition show the types to which the varieties as mentioned belong and not all varieties as such. These pictures do not constitute any warranty, express or implied, of crop performance.

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Mosaic-virus **resistance (CGMMV)**

BonDEFENSE

Cucumber varieties from Rijk Zwaan that are resistant to mosaic virus (CGMMV)

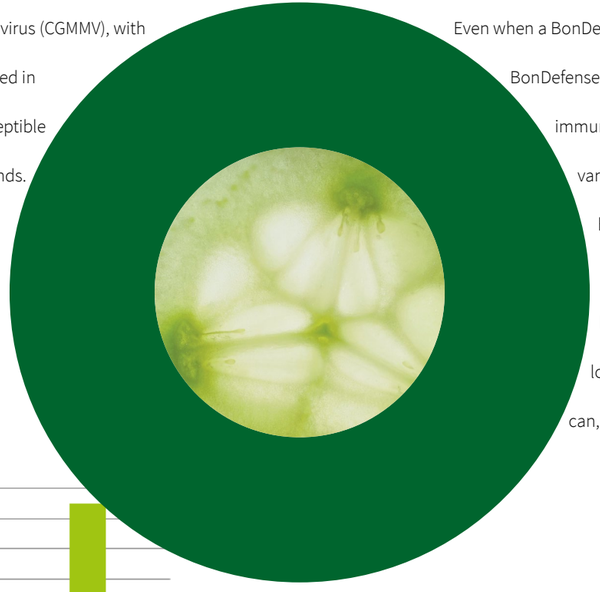
Sharing a healthy future

RIJK ZWAAN

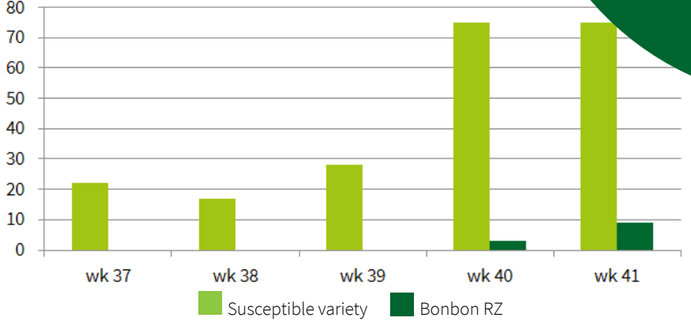
Why **BonDefense**?

Resistance

BonDefense cucumber varieties have high resistance (HR) to mosaic virus (CGMMV), with Bonbon RZ being the first example. Its unique trait has been confirmed in independent studies, in which Bonbon RZ was compared with a susceptible standard variety for summer and autumn cultivation in the Netherlands. The graph below shows that Bonbon RZ is significantly stronger against mosaic virus. Large practical trials confirm this conclusion.



% CGMMV infection per variety



Independent research into cucumber plants infected with mosaic virus (CGMMV) (2010)

Keep working hygienically

Even when a BonDefense variety is chosen it is important to work hygienically. BonDefense varieties are stronger against mosaic virus, but they are not immune to it. Moreover, it may well be necessary to choose susceptible varieties for other planting periods. Rijk Zwaan is, of course, working hard on new BonDefense varieties so that they can be grown year-round. Another important reason for always working hygienically is the responsibility towards fellow-growers. A crop that looks healthy can still be infected with mosaic virus and the virus can, therefore, spread from one nursery to an other.

Extending the range

The first BonDefense variety is Bonbon RZ. Rijk Zwaan is working hard on extending the BonDefense range. The variety Bonaire RZ has been introduced in 2013 on a large scale. The varieties that are included in the range may be recognised by a special BonDefense logo. This logo is also used in, for instance, the booklet with the entire range of Rijk Zwaan cucumber varieties and the RZ Seeds & Sharing.

CGMMV