







Pepper protected growing system

## Hazera - Committed to growing together

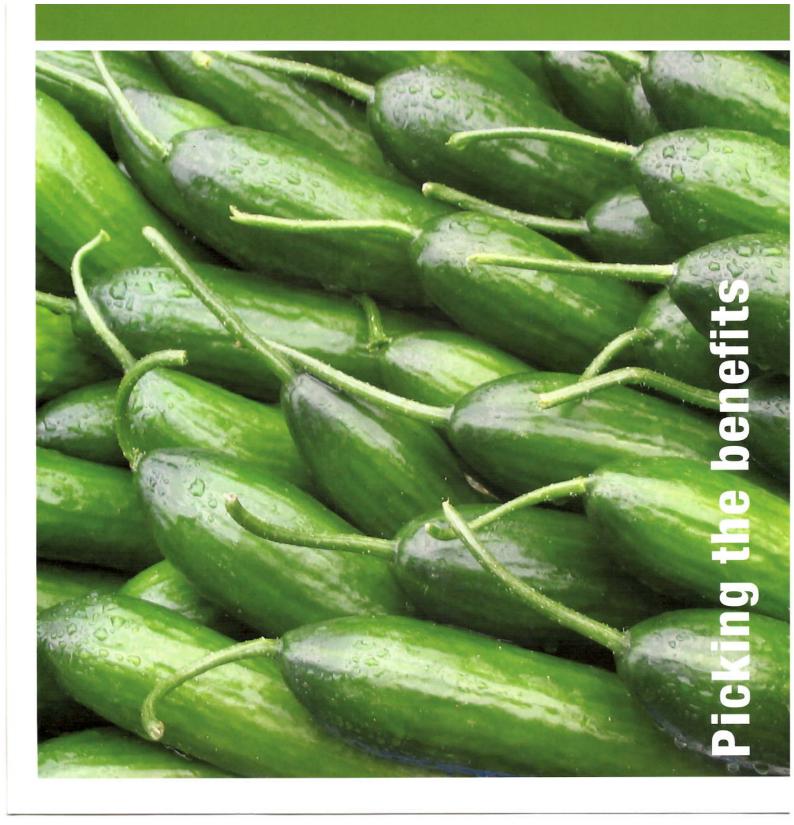
Hazera is a global leader in the seed industry. Hazera brings expertise, commitment and support, combining decades of experience with state-of-the-art technology. Hazera breeds, develops, produces and markets varieties and seeds in a wide range of vegetable crops around the world. Hazera's headquarters are situated in Israel and in The Netherlands, with subsidiaries in twelve countries and an extensive distribution network providing services in over 100 additional markets. This worldwide presence enables us to be close to our customers. It allows us to offer technical support and to anticipate and respond to local needs by creating varieties that fit specific climates, growing conditions and market requirements.

## A complete range of crops

Hazera offers varieties in a wide range of crops including tomato, onion, pepper, watermelon, cabbage, cauliflower, broccoli, melon, cucumber, radish, leek and lettuce - covering all major segments for these crops.

## Member of the Limagrain Group

Hazera is part of the Limagrain Group, an international agri-business based in France. Being a farmers' cooperative, the Limagrain Group understands the needs of its customers and has grown to become the largest seed company in Europe, specializing in vegetables, field crops and cereal products. Limagrain's vegetable seed division is the second largest company in the industry.





Cucumbers are the 6th most important vegetable crop grown almost throughout the world, both in open fields and greenhouses. More than 2 million hectares of cucumbers are cultivated globally, yielding at least 70 million tons of fruits. There is great diversity in cucumber types, depending on their geographic distribution and use.

Hazera has a long tradition of cucumber breeding. As one of the first companies globally to develop short cucumbers, called Beit Alpha, we have been innovating, improving and gradually expanding into more cucumber types, such as Long Dutch, Snacking and Asian cucumbers. Adapting to local growing conditions, as well as high marketable output, are key targets of our cucumber breeding projects. We believe that working closely with growers and distributors, coupled with understanding customer needs, results in successful varieties.

## Growers

The key to our success is understanding grower needs and aligning our projects with these needs. Our programs target varieties that are adapted to the local environment, since climate greatly impacts crop performance. Breeding aims include: high yield, fruit quality and good resistance against fungal and viral diseases, including powdery and downy mildew, CVYV, CMV, ZYMV and CYSDV. It is essential to select crop types suitable for the locally applied growing systems, such as different greenhouse types or growing management technologies. We aim to supply easy-to-pick plant varieties that can

be effectively managed in order to provide the grower with the best yields for optimal financial results.

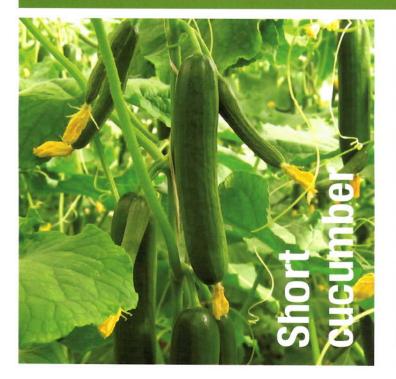
# Trade and fresh chains

The goals of trade and fresh chains are fast fruit turnover, attractive produce and optimal shelf life combined with minimum waste. With these qualities, chains can offer better returns to the producer as well. Our breeding target is to provide varieties that cut costs for traders, offering uniform fruits which are easy to grade and have the traits that chains require.

# The consumer

Cucumber is usually considered a bulk salad product in the fresh chain. Our breeding currently targets more attractive and qualitative traits to catch the consumer's attention and interest.

Important properties are external appearance, crispiness, taste, shelf life and convenient size. Snacking is now an ongoing trend among the younger generations, for which we currently provide innovative varieties. A cucumber is a very healthy thirst quencher, with no fat and is an excellent source of potassium and vitamin K.





# Short cucumber

The short cucumber is one of the most widespread cucumber types throughout the world. From Central Asia, the Middle East & Mediterranean to the Americas, Oceania, North East Europe and China short cucumbers are popular and grown in different ways, from open field to indoor cultivation. Adapting short cucumber varieties to all these climates can only be accomplished through breeding and selecting that is conducted close to these markets. Fruit length varies from 15 cm (mini) up to 21 cm (midi), color and appearance may differ quite a bit depending on the local market needs, as well as disease resistances required for those markets. Hazera offers a wide range of varieties selected especially for these markets, based on working closely with customers and dedicated programs.

# Baby cucumber

The trend for convenient sizes is particularly popular among younger consumer groups, such as Millennials, generation X and centennials. Baby cucumbers are healthy food that is easy to eat and easy to carry, that are also used as snack or cocktail cucumbers. Fruits are not bigger than 8 to 12 cm in size, and require attractive presentation in retail stores. Hazera is working on developing special traits to bring the consumer a new experience and set future trends in appearance, taste and texture.





# Long cucumber

The Long European (Dutch) cucumber is consumed mainly in North Europe, USA, Canada, Oceania and South Africa. The fruits are generally between 300-450 grs, 28-35 cm long, with a dark green, slightly ribbed skin and are usually eaten in salads. Initially, it became very popular to grow these varieties in heated glasshouses in northern Europe, and production then extended into regions where non-heated greenhouses are used, especially Spain and Greece. Our robust breeding activities in Spain provide a strong new range of varieties for the non-heated segment, varieties that incorporate multiple disease resistances against several of viruses, such as CVYV, CYSDV and powdery mildew. Hazera's varieties contribute to the wholesale market, providing high quality varieties for export, with outstanding uniformity, thus resulting in savings in the labor intensive grading process.

# Asian cucumber

Over 4.000 years ago, the cucumber originated in India and spread all over the world. After being introduced to China through the silk route during the Han dynasty more than 2,000 years ago, China became the leader in cucumber production. Nowadays, over 50% of the global cucumber acreage is in China. Hazera began breeding cucumbers for the Asian market quite recently, and is now introducing unique varieties into the Chinese market with special traits in terms of yield, fruit quality & appearance, combined with disease resistances. This project is opening the gate to new innovations in Hazera's cucumber projects.





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