



Hazelnut Business Development Strategy

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Simcoe March 23st 2011

- **Ferrero Group overview**

- Hazelnut Business Development (HBD)

- Quality in hazelnut

- Ontario Opportunities



- 4th place in the world **confectionery** market
- Market leader in **Italy** and **Germany**, 2nd in **France**, strong growth in **North America**
- Annual Turnover approx **7 billion €**
- More than **20.000** employees worldwide



FERRERO

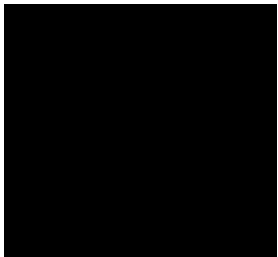
HBD
R E S E A R C H



nutella

kinder
Chocolate

Over 40 products on the market, in
more than 100 countries



kinder
bueno



kinder
SURPRISE

kinder
country

kinder
pinguí
SCHOKO
mit Milch

- Ferrero International overview

- **Hazelnut Business Development (HBD)**

- Quality in hazelnut

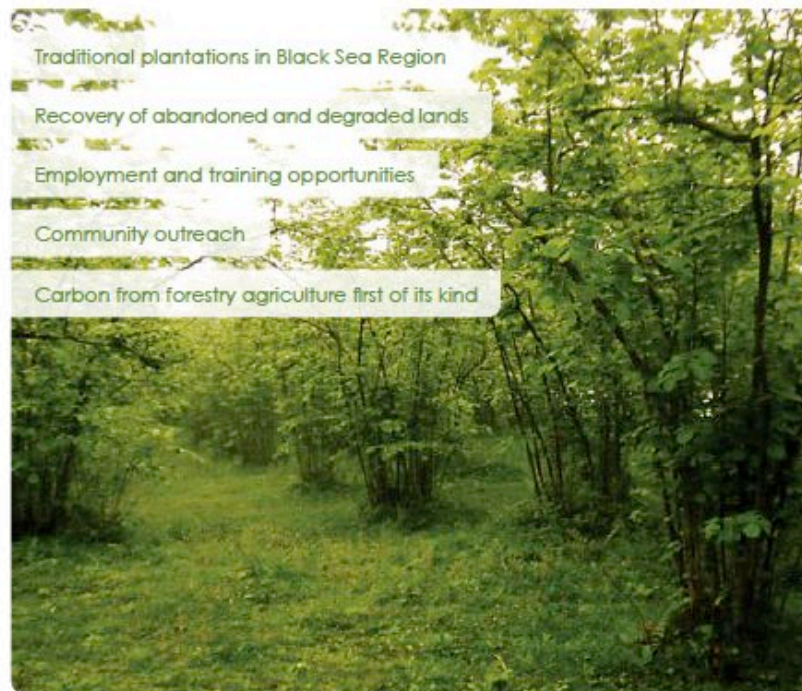
- Ontario Opportunities

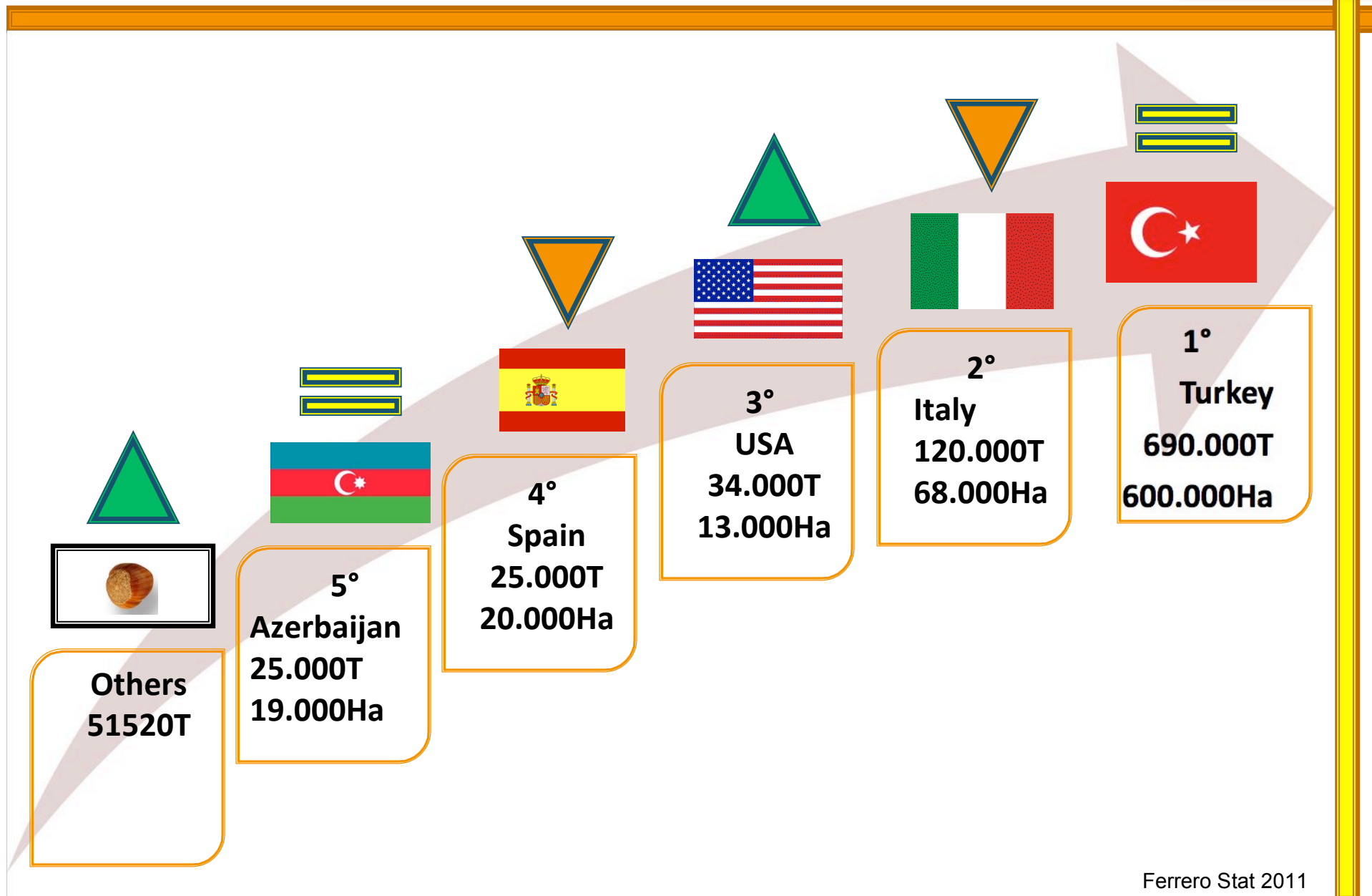
FERRERO

HBD
R E S E A R C H



Afforestation with Hazelnut Plantations in Western Georgia





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- 400 cultivars
- 20 widely cultivated
- Industry:



- Tonda Gentile delle Langhe
- Tonda Gentile Romana
- Tonda di Giffoni
- Barcelona
- Turkish
- Others

Round, small, sweet taste

Round, skin removal, most abundant

Round, big, our favorite

Round, very big, poor kernel %

Round, small, high kernel %

French, Spanish, Georgian, Azeri

- Fresh 5% ↔ Industrial 95%
- Processed:

- Roasted

- Whole
- Diced
- Paste



- Hazelnuts require a lot less inputs than most crops:

- Time
- Water
- Chemicals
- Efforts
- Money



Can well be considered a part time crop!



Field



**Drying
Storing**

















**Deshelling
Roasting
Processing**



Increase of quality

Decrease of quality

Parameter	Genetics	Cultivation
Quality Harvest		
Peeling		
Kernel %		
Fiber		
Molds		
Caliber		
Twin seeds/nuts		
Shape		
Chemical composition		

Genetics:

Substantial differences among varieties

– Good Peeling

- Tombul, Palaz, Giffoni, TGL,

– Low Peeling

- TGR, San Giovanni, Barcelona



- Genetics:

- Range 35-50%
- Turkish hazelnuts with the highest values
- “Round” hazelnuts usually perform better than “elongated”



Giffoni



Barcelona

- Cultivation:

- Where it is needed a proper irrigation should be implemented
- At the right times of the year nutrients should be given through fertilization

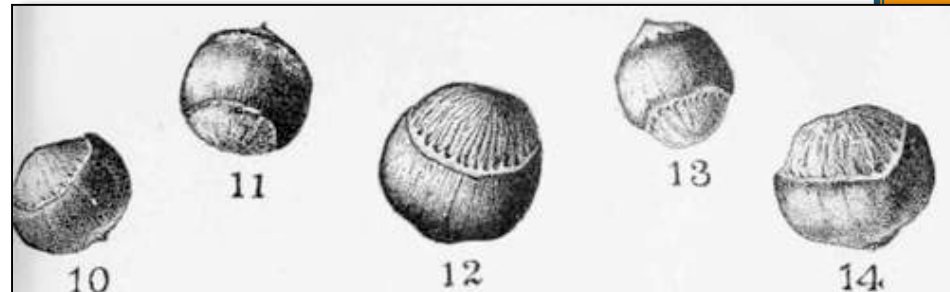
- Genetics:
 - It plays a big role on the taste, making the hazelnut woody or softy
 - The balance among carbos and lignified polymers depends on the variety
- Cultivation:
 - Nutrients increase ratio Carbos/Lignin
 - Irrigation when necessary



- Genetics:
 - Some varieties seem to be more susceptible in particular conditions (high umidity)
- Cultivation:
 - First harvest anticipated
 - 2-3 harvests not to leave nuts on the soil
 - Correct post harvesting procedure including
 - Drying of nuts down to 6%
 - Proper storage of the product



- Genetics:
 - Kernel variety range between 10 and 15 mm
 - Jumbo nuts over 20 mm
- Cultivation:
 - Irrigation
 - Pruning
 - Fertilization



- Genetics:
 - It depends on variety and genotype
 - Climate change?



- Genetics:
 - Round and elongated ones
 - Roundness index



- Genetics:
 - Oil content changes within the varieties
 - Sugars and phenols are found in different concentration depending on the variety
- Cultivation:
 - Fertilization designed to achieve correct development
 - Irrigation has a positive effect on starch formation but negative on phenols
 - Phenols production decreases with fungal infections and wounds as well as lack of light

- Shield bugs damage
- Blanks/shrivelled
- Molds/internal defects



Brown Marmorated Stink Bug



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- Three main areas of challenge
 - Cold hardiness
 - Eastern Filbert blight
 - Bud mite
- Solution could be really near



OSU Oregon State University

RUTGERS



CO₂ – Energy - Water



Oregon
2,600 mi



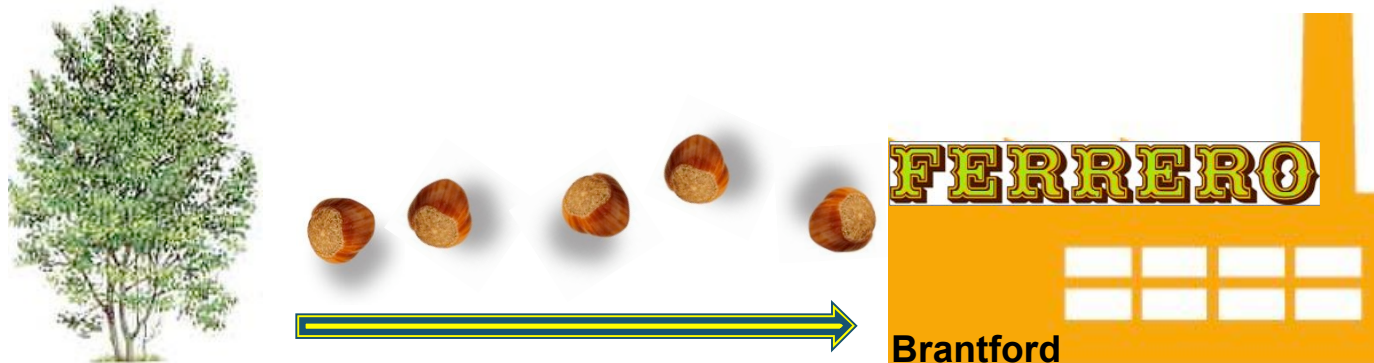
Turkey
5,500 mi



Italy
4,500 mi



- Proximity to Ferrero plant
 - Freshness of product
 - Local simplified logistics
 - Custom operations
 - Traceability of the product
 - Better communication with producers



- Sustainability of the supply chain
 - Less energy inputs due to transportation
 - Less “cradle to customer” outputs
 - Atmospheric emissions
 - Water pollutants
 - Solid waste



A more sustainable hazelnut

- A closer relationship with the industry
 - Strong and constant demand of product
 - Clear indications on quality and standards
 - A large actor on which rely for representativeness
 - Sustainability for the future



Momentum for the Ontario hazelnut

Grazie

e

Arrivederci

