

Brio organic inspection and farming

**what we are doing and
our experience with
carrot production in
Sicily**

Brio S.p.A. is a producer and a trader of products only from organic farming.

It has been established in 1993 and belong to Cooperativa La Primavera, a cooperativa of only organic farmers situated in Verona.



Brio sales markets

▪ Austria
▪ Danimarca
▪ Finlandia
▪ Francia
▪ Germania
▪ Gran Bretagna
▪ Grecia
▪ Olanda
▪ Polonia
▪ Repubblica Ceca
▪ Spagna
▪ Svezia
▪ Svizzera



The aim of inspection system in organic produce

The general aim of the Inspection System is to ensure that all farms comply to the organic regulations

so that

- all farmers operate in the market with the same rules

so that

- consumers are assured that they are buying products that come from trustworthy and compliant organic farms

- Brio inspection is based on:
 - FARM LEVEL:
 - checking the compliance of organic farming for each product.
 - SUPPLIER LEVEL:
 - relationship between farmers and supplier
 - control of the exact import of goods from each farm
 - checking no products come from “ghost supplier”

What is our experience?

- some cultivations are more difficult than others, especially in some areas and seasons
- Each cultivation in organic farming experiences a problematic phase, due to:
 - weed competition, fungi and pests, weather condition

In addition, Brio check if the organic nitrogen input is enough for the expected yield

What is a critical period for organic cultivation?

Not allowed microdosis are possible



Correct timing for organic inspection
and correct matrix for analysis (i.e.
soil or leaves)



Brio inspection system into the process: examples of critical periods



Culture	Potential risk	Samples Timing (critical period)	Matrix	Chemicals to find
Vegetables trasplanted in open fields	weeds	30 d from trasplanting	soil under the row (5 cm depth)	P.a. diserbanti, fra cui Glifosate, Diquat, Paraquat, Glufosinate ammonio, Linuron e metaboliti
	earth insect			P.a. geodisinfestanti (Clorpirifos, Teflutrin, Etoprofos, Oxamil, Fenamifos, Cadusafos)
Carrot (i.e. sowing cultivation)	weeds	30-40 d after sowing, (3-4 true leaves), preferably soil sampled in humid area	soil under the row (5 cm depth)	Metribuzin, Prometrina, Linuron e metaboliti, Pendimetalin, Aclonifen, Clomazone; Diquat, Paraquat, Glifosate
	nematods and earth insect			Geodisinfestanti, Carbammati, organofosforati (Teflutrin, Clorpirifos, ecc.), Fenamifos
	weeds	50-40 d before harvesting	leaves	Clomazone, prometrina, fluazifop, linuron and metabolite
Pears	and fungi (alterna)	half june	leaves	P.a. insetticidi e fungicidi, fra cui: Fenoxicarb, regolatori di crescita, ditiocarbammati, Fenazaquin, Imidacloprid,
Table grape	thrips and fungi (botrytis, early blight)	grape at pea size	leaves	insetticidi e fungicidi, fra cui: piretroidi indoxicarb, flufenoxuron, acrinatrina, lufenuron
	mite, fungi	summer (pre harvest)		Bromopropilato, fenazaquin, Procimidone, strobilurine, fenexamide, pirimetanil, ciprodinil, fludioxonil
	botrytis	after autumn rains		Cimoxalin, fosetil alluminio e fosfiti (search ac. Fosforoso) (metod. Det. Metaboliti Fosetil AI), Vinclozolin e altri

Brio control system: analysis and residual output

	N° analisys		No Compliance	
	2008 (al 01/09/08)	2007	2008 (al 01/09/08)	2007
Samples in field	110	246	15	26
Samples of final products in Brio warehouse	151	242	3	3
Total	261	488	18	29

Brio inspection system at supplier level, why?

- Often in South Italy, the Packers buy the products directly on the fields and will harvest the products themselves, having already paid the farmers.
- The quantity harvested is “coincidentally” the same as the quantity demanded.
 - E.g., packer make claim he has harvested 12 tons when in fact he has harvested 8 and the other 4 tons have been secretly supplied by “ghost producers/fields”
 - Orange, Lemon, potato, carrots, clementine, table grapes and some vegetables in Pulia and Campania.

Brio inspection system at supplier level: what we do

- Brio compares the yield of each farmer, registered with the packer, with the actual physical size of the farm.
- At random, Brio goes directly to the fields during pre-harvest period and makes a prediction of the number of tons that will be harvested. This predicted yield is compared to the final harvested yield, claimed by the packer.
 - Orange, tomato, table grape, potato

We discovered strange net yield:

lemons 60 tons/ha
new potatoes 40 tons/ha
carrots 60 tons/ha

CARROT: Brio experience in Sicily

- Sicily has been the main centre for the growing of conventional carrots for many years.
- Currently the market demand for conventional carrot covers only one month out of a potential three months

Several conventional carrot growers have now changed over to organic methods.

The surface area involved is more than 250 hectares

BRIO has undertaken and managed its own carrot production in Sicily in a rented farm during 2006 and 2007

Brio experience in carrot: special difficulties

- In Sicily weed management in carrots is more difficult than northern European areas; cultivation starts in autumn and ends in spring
 - weeds come out from autumn till spring continuously, in several botanic family depending on soil temperature fluctuation
 - E.g.: graminaceae come out in winter even after flaming treatment
 - E.g.: *Caucalis daucoides*, a weed similar as carrot, come out only after autumn
 - Weeds grow faster than carrot, especially in winter

Brio experience in carrot: special difficulties

- And so:
 - Many weeds and specially graminaceae come out eve after flaming tretment anb before you can do the first weeding/hoeing
 - Carrot grows slowly and foliage remain very small so that first hoeing can cause earth to cover the young plants (=DEATH)
 - Therefore first hoeing can not be so close to the row of carrots

How organic Sicilian farmers grow their carrot?

- **Sicilian farmers sow carrots in two or three closely spaced rows in the ridge or in the flat**



No hoeing is possible
between the double
rows

SO THERE

Weed control only by
hand is possible!

How organic carrots are grown by Sicilian farmers

Example of three double rows on the flat



Weed management is the main cost!

- We have tested double row and single row
- Hand weeding is less expensive with single row
- The university of Pisa tested an area of about 250-350 h/ha of single row carrots by hand weeding in a spring cultivation in Centre of Italy.

STRATEGIA PER IL CONTROLLO FISICO DELLE INFESTANTI SU CAROTA IN SICILIA



Our technical choice

- Flat raised bed for sowing
 - Because in this way is possible to make a stale seedbed technique
- 2 times stale seedbed technique

Rotating rolls harrow,
patented by Univ. Pisa



Our technical choice



Our technical choice

- Sowing 5 single rows 20 cm apart
- Flame treatment before carrot emergence
- 3 precision hoeings

• Only with single rows is possible to hoeing as close as possible



Weed problems

Graminaceae came out even after flaming treatment

It is not possible to hoeing so close to the row as you wish



Weed problems



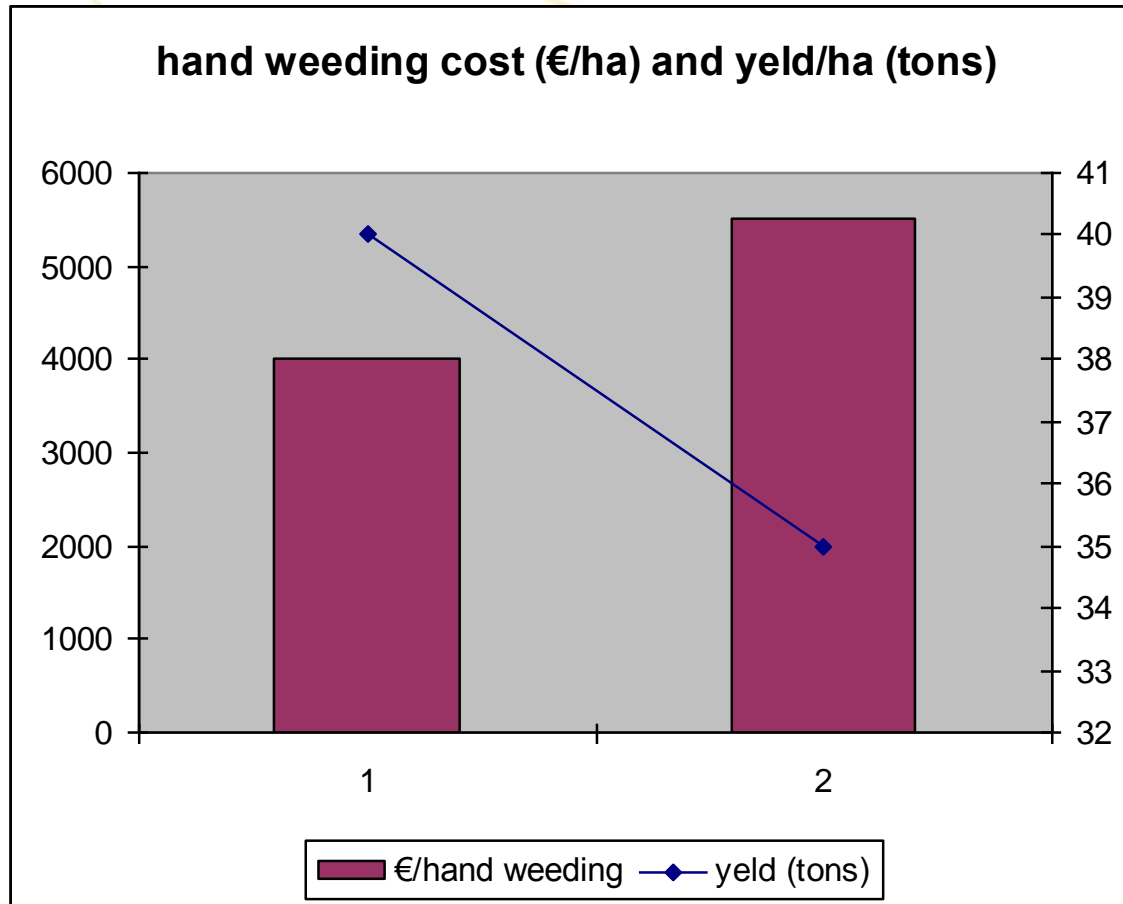
Some weeds
look like carrot:

You can not
even pick them
by hand!

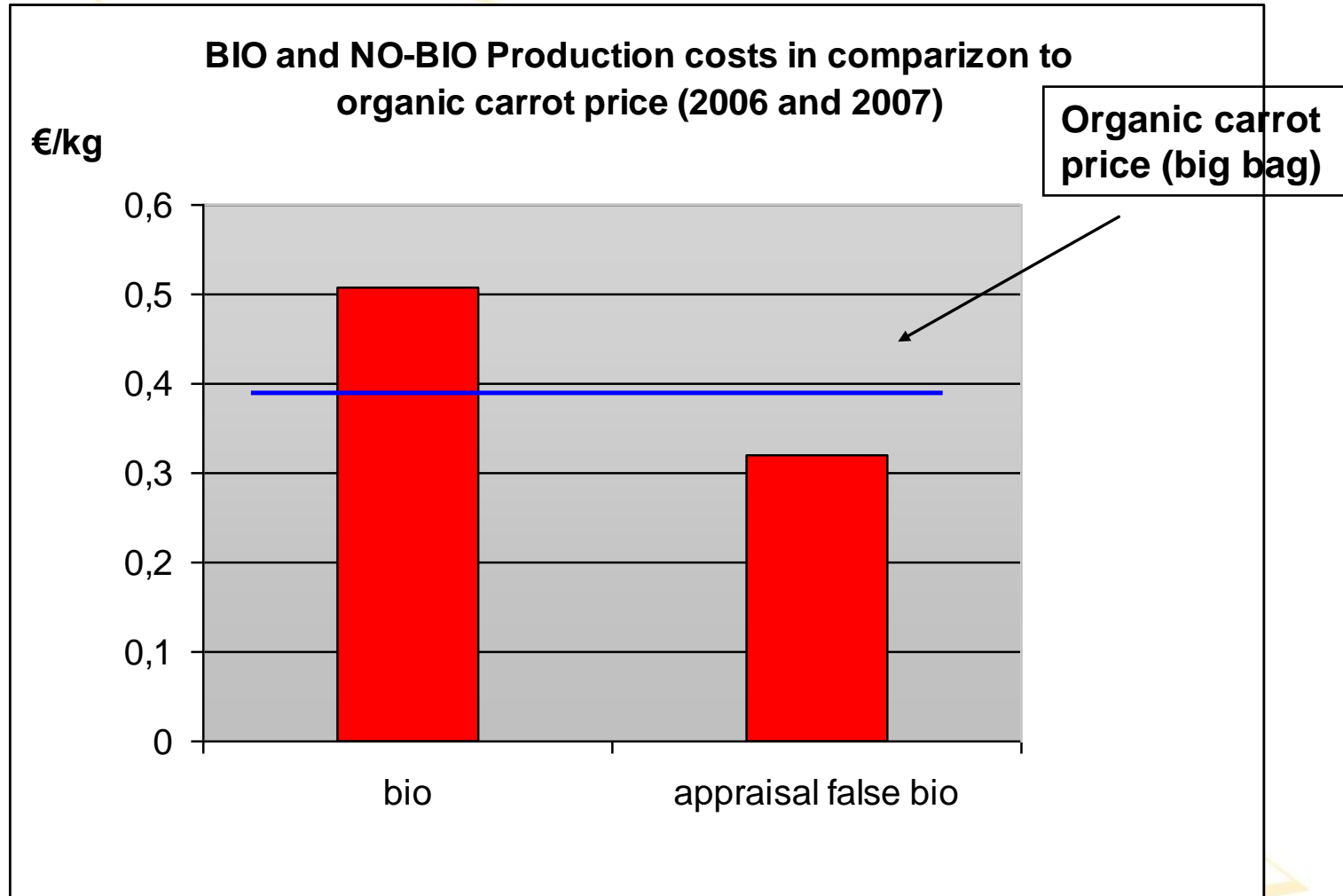
Hand weeding, how much does it cost in Sicily?



Weeds: a double cost

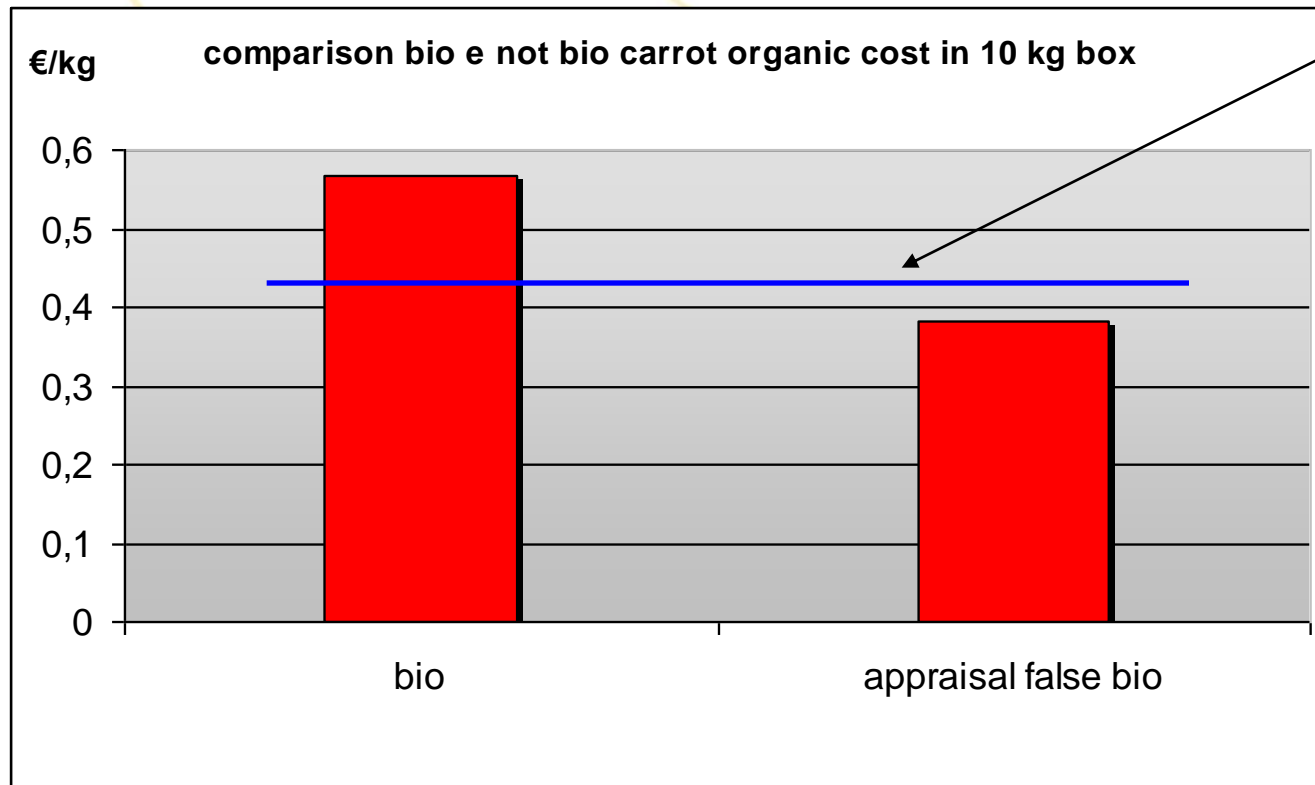


Selling prices vs cost



Selling prices vs cost

Organic
carrot price



- Carrot market prices during the two years were under the production costs
- Market price was lowered by bigger Sicilian producers who offered lower prices because of their lower production cost!
- Unfair competition?

What do organic farmers/consumers need?

- An effective control system to prevent fraud, as the current system is not fraud proof
- together with
- Prices market which covers production costs, otherwise “ethical” producers suffer!

A large, stylized outline of a leaf in a light yellow color, positioned in the background of the slide.

Thanks for your attention!

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How BRIO and costumers could ensure all the food organic chain?

- Discuss with the farmers the production costs
- Plan organic productions with a fixed price together with costumers
- Decide technical organic guidelines that farmers have to follow strictly.
- Check the production during the critical periods and estimate the final yield.