

Honey Cost: an experimental approach for determining honey production costs

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HONEY COST



**RETERURALE
NAZIONALE
20142020**

Honey Cost survey – objectives:

- Carry out an annual «statistical-economic» survey which has as its object the determination of the production cost of honey in market-oriented beekeeping companies, in order to analyze their economic and production capacities and monitor the situation in the different production contexts.
- Respond to the information needs of sector operators, the Ministry of Agriculture, the world of research, the consultancy and evaluation system.
- Provide a free benchmark service, useful to both beekeepers and consultants.

Honey Cost survey – 3 phases:

1. Definition of the methodology, type and size of the sample, survey tool and data collection methods.
2. Management and conduct of the survey at national level, control and validation of data.
3. Activities for valorization and dissemination of the results and accreditation of the survey at the various institutional levels.

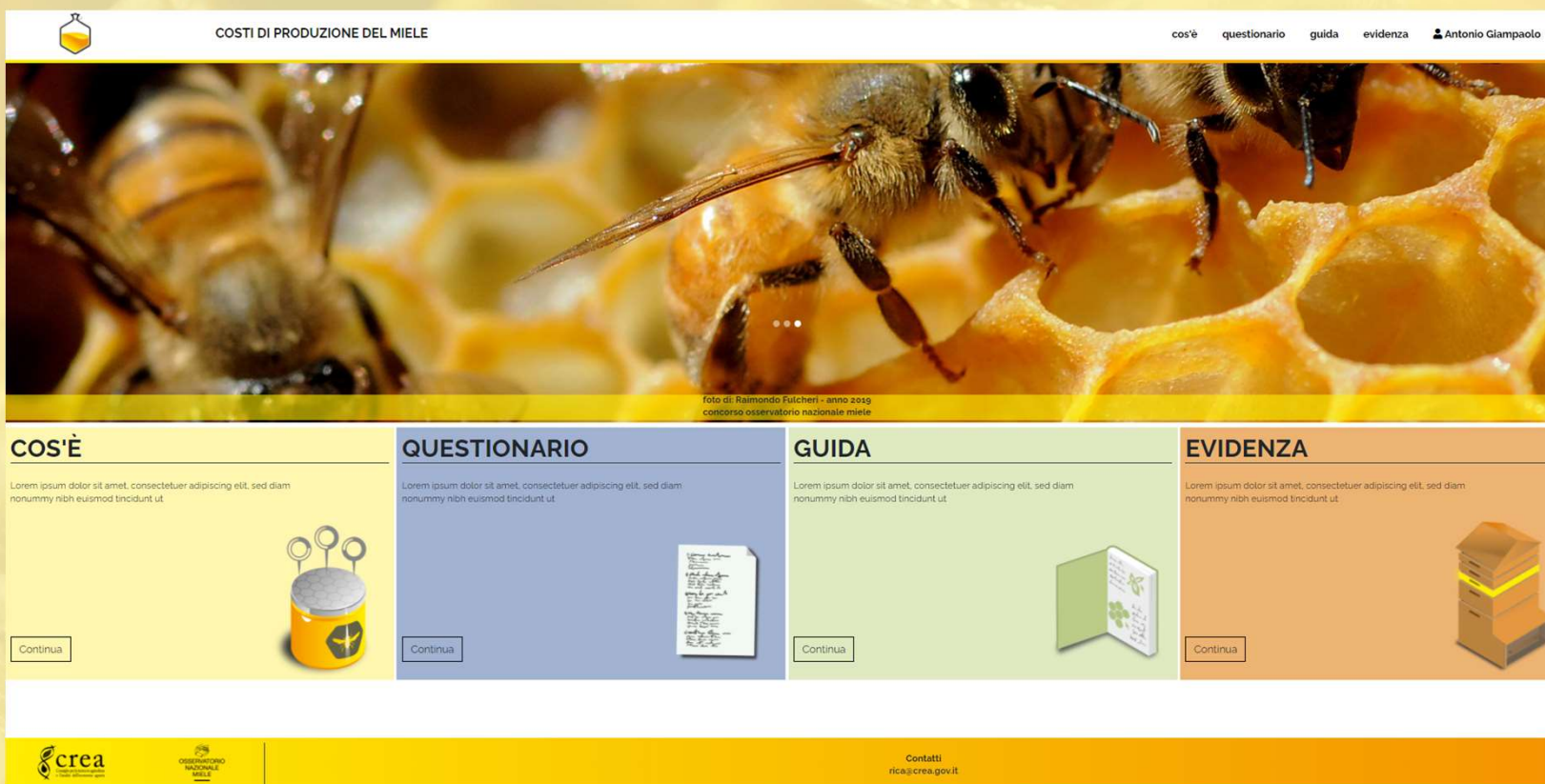
Honey Cost survey – methodology and data collection:

- Preparation of the questionnaire: in 2021 a first internal testing phase was carried out at CREA-PB and then a further testing phase was started with a small group of beekeepers.
- Selection of the sample of farms representative of the BDB universe.
- The data are collected on an annual basis, with the CAWI-CATI system. The data collection takes place through a specific web application, also making use of a PDF version of the questionnaire. The compilation of the web questionnaire, with restricted access, can be carried out independently by the farmer or, alternatively, with CREA-PB support.
- Participation in the survey is voluntary. The collection, processing and dissemination of results takes place in full compliance with the rules on the protection of personal data (GDPR) and statistical confidentiality.
- The data are validated and stored in the CREA database

Definition of the sample

- Type of sample: random - stratified
- Reference population from BDN 2019: different sampling tests on the entire population and only commercial farms with an economic size of at least 8,000 euros of SO (6,077 commercial farms).
- Error rate: 5% national and 10% regional
- The representativeness of the sample is by region and size class (3 classes of PS, for a total of 63 strata).
- Farms Allocation Method: Bethel
- Size of the final sample: 434 farms

The website: <https://honeycost.crea.gov.it/>



The screenshot shows the website interface for 'COSTI DI PRODUZIONE DEL MIELE'. At the top, there is a navigation bar with a logo, the title 'COSTI DI PRODUZIONE DEL MIELE', and user options 'cos'è', 'questionario', 'guida', 'evidenza', and 'Antonio Giampaolo'. Below the navigation bar is a large banner image of bees on a honeycomb. Underneath the banner, there are four main content blocks: 'COS'È' (yellow background), 'QUESTIONARIO' (blue background), 'GUIDA' (green background), and 'EVIDENZA' (orange background). Each block contains a placeholder text 'Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut' and a 'Continua' button. The footer contains the 'crea' logo, the 'Osservatorio Nazionale Miele' logo, and contact information: 'Contatti rca@crea.gov.it'.

The questionnaire

- **General Data**
(Type of farming and organization of production activity)
- **Structural Data**
(The provision of buildings, artefacts, systems, machines and equipment)
- **Forms of marketing**
(marketing channels and any commercial agreements and certification systems adopted)
- **Composition of the workforce**
(In addition to some general data on the tenant, the possible presence of family members, collaborators and employees)
- **Consistency of breeding**
(excluding the hive structure))
- **The productions**
(Production of the year, sales, self-consumption and stocks)
- **The expenses and costs of breeding**
(current costs and expenses for packaging, marketing, rentals/leasing, ordinary maintenance of owned assets and general expenses)
- **Employment and transfers**

**The information requested only the first year.
Subsequent years only possible updates.**

**Data and information to be collected every
year**



2. Strutture

Inserisci i dati delle strutture.

* **Fabbricati**

Tipologia	Dimensione	Anno di acquisto	Affitto	Azioni
Ufficio	255,00 mq	1999		<input checked="" type="checkbox"/> <input type="checkbox"/>

+ Aggiungi fabbricato

* **Macchinari**

Tipologia	Numero	Anno di acquisto	Affitto/Leasing	Azioni
Autocarro inferiore a 35	3	2001		<input checked="" type="checkbox"/> <input type="checkbox"/>
Sceratrice a vapore	2	2014		<input checked="" type="checkbox"/> <input type="checkbox"/>

+ Aggiungi macchinario

* **Attrezzatura**

Tipologia	Numero	Anno di acquisto	Azioni
Diaframma	4	2009	<input checked="" type="checkbox"/> <input type="checkbox"/>

+ Aggiungi attrezzatura

3. Commercializzazione

Inserisci i dati riguardanti la commercializzazione, le certificazioni e le associazioni.

* **Canali di commercializzazione**

Canale	Prevalenza	Azioni
Ingresso cooperativa	20,00%	<input checked="" type="checkbox"/> <input type="checkbox"/>
Dettaglio tramite rivenditore	80,00%	<input checked="" type="checkbox"/> <input type="checkbox"/>
	100,00%	

+ Aggiungi canale

* **Canali di fornitura**

Accordo con intermediario (prezzo pattuito)

Accordo con GDO

Accordo con rete HORECA

Accordo con cooperativa / OP

Accordi con enti pubblici (scuole, mense, ecc.)

Accordi con esportatori UE

Accordi con esportatori extra-UE

Altri tipi di accordi commerciali

* **Certificazioni aziendali**

Nessuna certificazione aziendale

Ridotto impatto ambientale

Biologica

Buone condizioni agroambientali

Sistema di gestione per la qualità (UNI EN ISO 9001/Feloni 2000)

Sistema sicurezza sul lavoro e di etica sociale (ISO 26001, OHSAS 18001, SA 8000)

Sistema di gestione ambientale (UNI EN ISO 14001)

Sistema comunitario di ecogestione e audit EMAS

Sistema di gestione della sicurezza in campo alimentare (UNI EN ISO 22000)

Sistema di gestione per l'autocontrollo igienico dei prodotti e dei processi (UNI EN ISO 10854)

Rintracciabilità interaziendale (UNI EN ISO 11020)

Rintracciabilità della filiera agro-alimentare (UNI EN ISO 22005)

Altra tipologia di certificazione

* **Certificazioni di processo**

Nessuna certificazione di processo

Produzione integrata certificata (Marchi regionali, SONPI, Norma UNI 11233)

Prodotto agroalimentare tradizionale iscritto nel registro del MIPAAF

Marchio collettivo privato (consorzio agroalimentare, consorzio d'area)

Carbon footprint (UNI EN ISO 14064)

Forniture prodotti agroalimentari a GDO (BARC, ISF, EurepGAP)

Sistema di qualità nazionale zootecnica

Ciclo di vita del prodotto (UNI EN ISO 14040 LCA)

Indicazione Geografica Protetta (IGP)

* **Certificazioni di prodotto**

Nessuna certificazione di prodotto

Denominazioni di Origine Protetta (DOP)

* **Tipologia associazione**

Associazioni di apicoltori

Associazioni di categoria (OOP/PA)

5. Consistenza allevamento

Inserisci i dati riguardanti la consistenza dell'allevamento.

Inventario iniziale

Numero di arnie: 80 * Valore unitario (€): 300,00

Movimenti

Mese	Tipologia	Numero	Valore unitario	Valore totale	Azioni
Gennaio	Acquisto	5	€ 300,00	€ 1.500,00	<input checked="" type="checkbox"/> <input type="checkbox"/>
Dicembre	Vendita	5	€ 200,00	€ 1.000,00	<input checked="" type="checkbox"/> <input type="checkbox"/>

+ Aggiungi riga

Inventario finale

Numero di arnie: 80

* Valore unitario (€): 280

Consistenza media annuale: 84,58

6. Produzione e ricavi

Inserisci i dati riguardanti i tuoi prodotti.

Prodotti

Prodotto	Valore medio	Giacenza iniziale	Produzione	Autoconsumo	Reimpiego	Trasformazione	Vendita	Giacenza finale	Azioni
Miele	€ 3,00	10,00 Kg	350,00 Kg	25,00 Kg	0,00 Kg	0,00 Kg	100,00 Kg	235,00 Kg	<input checked="" type="checkbox"/> <input type="checkbox"/>

+ Aggiungi prodotto

Tipi di miele

Tipo prevalente	Incidenza
Nespoto	100,00%
	100,00%

+ Aggiungi tipologia di miele

Aluti pubblici e risarcimenti (€)

Aluti in corso esercizio: 500,00 Risarcimenti assicurativi: 100,00

Salva

Data entry
(some
examples)

7. Costi

Inserisci i dati riguardanti i costi che hai sostenuto nell'anno corso.

* **Costi correnti**

Alimenti per nutrizione

Prodotti farmaceutici

Assicurazioni sull'allevamento

Servizi veterinari

Altri servizi terzi (consulenza, quote associative)

Certificazioni

Acqua potabile

Elettricità

Telefono / Connessione internet

Materiale di consumo * Valore (€): 500,00

Contenitori per il miele sfuso

8. Lavoro aziendale

Inserisci i dati riguardanti il lavoro aziendale.

Conduttore

* Livello di specializzazione: Operatore comune * Numero ore: 2100

Familiari e coadiuvanti

* Livello di specializzazione: Operatore comune * Numero ore: 1000

Dipendenti e collaboratori

* Livello di specializzazione: Operatore comune * Numero ore: 300

Costo calcolato: € 2400,00 * Costo aziendale (€): 3,00

Totale ore: 3400

* **Attività aziendali**

Conduzione alvari * Numero ore: 200

Spostamenti * Numero ore: 1800

Estrazione e stoccaggio del miele

Lavorazione miele * Numero ore: 200

Lavorazione altri prodotti

Manutenzione

Invasettamento

Commercializzazione * Numero ore: 1200

Totale ore: 3400

Nomadismo

* Chiamate persone: 0 * Posteggi autostradali (€): 0,00 Costo spostamento: € 0

Salva

Main results of 2021-2022 survey

- Objective of this first step of the analysis is to provide a farm profile according to different levels of costs of production of honey.
- Only sample results due to low level of coverage.
- First a descriptive analysis is provided, then we analyzed the main components of costs that occur in the process of production of honey according to 3 different levels.
- The database has been validated in each single variable and indexes of balance on production process and several outliers have been excluded from the elaborations.

Three levels of production costs of the honey production process.

Bilancio processo produttivo – sezione costi e margini

COSTO VARIABILE UNITARIO (CVU - CVP / PROD)		[ICVUI] €/kg	0,00	PLT=100%
MARGINE LORDO (ML - PTL - CVP)		[IML]	0,00	%
MARGINE LORDO UNITARIO (MUL - ML / PROD)		[IMUL] €/kg	0,00	0,00 0,0%
Incidenza COSTI VARIABILI (ICV + CVU/Prezzo)		[ICV] %	0,00	
Costi fissi	Affitti, leasing e altre spese generali	[SG]	0,00	
	Manodopera retribuita e oneri sociali	[MR]	0,00	
	Ammortamenti cespiti	[AC]	0,00	
	Manutenzione ordinaria	[MN]	0,00	
	Totale Costi Fissi (CF = SG + MR + AC + MN)	[CF]	0,00	0,00 0,0%
BREAK EVEN POINT (BEP = CF / (Prezzo - CVU))		[BEP] kg	0,00	
COSTO TOTALE DI PRODUZIONE (CTP - CVP + CF)		[CTP]	0,00	0,00 CT=100%
COSTO TOTALE UNITARIO (CTU = CTP / PROD)		[CTU] €/kg	0,00	
Incidenza COSTI TOTALI (ICT - CTU/Prezzo)		[ICT] %	0,00	
MARGINE OPERATIVO (MO - ML - CF)		[MO]	0,00	0,00 0,0%
MARGINE OPERATIVO UNITARIO (MOU = MO / PROD)		[MOU] €/kg	0,00	PLT=100%
Costo opportunità lavoro familiare		[CLF]	0,00	0,00 0,0%
COSTO COMPLESSIVO (CC - CTP + CLF)		[CC]	0,00	
COSTO COMPLESSIVO UNITARIO (CCU = CC / PROD)		[CCU] €/kg	0,00	0,00 0,0%
MARGINE OPERATIVO FAMILIARE (MOF = MO - CLF)		[MOF]	0,00	

1

Costs for technical means and services

2

Costs of first level + fixed costs

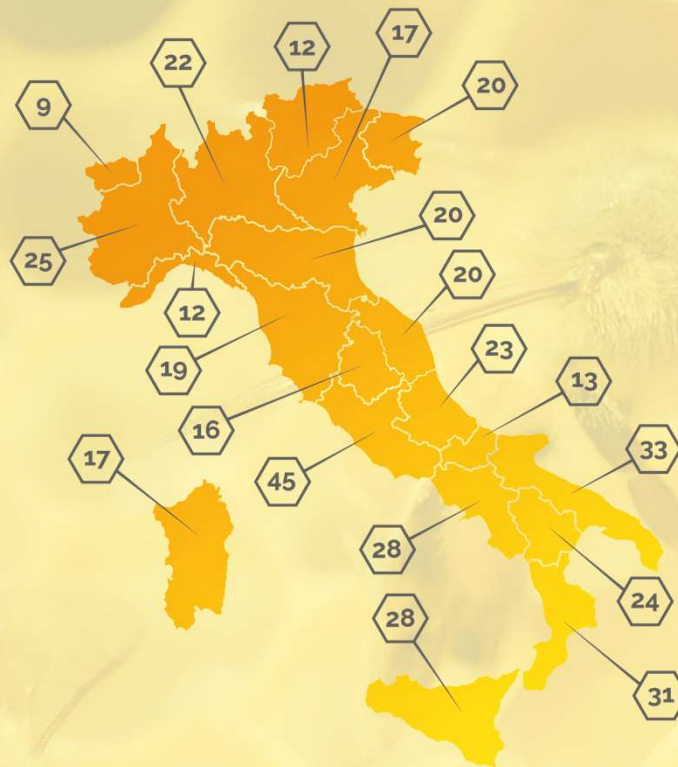
3

Costs of second level + family labor costs



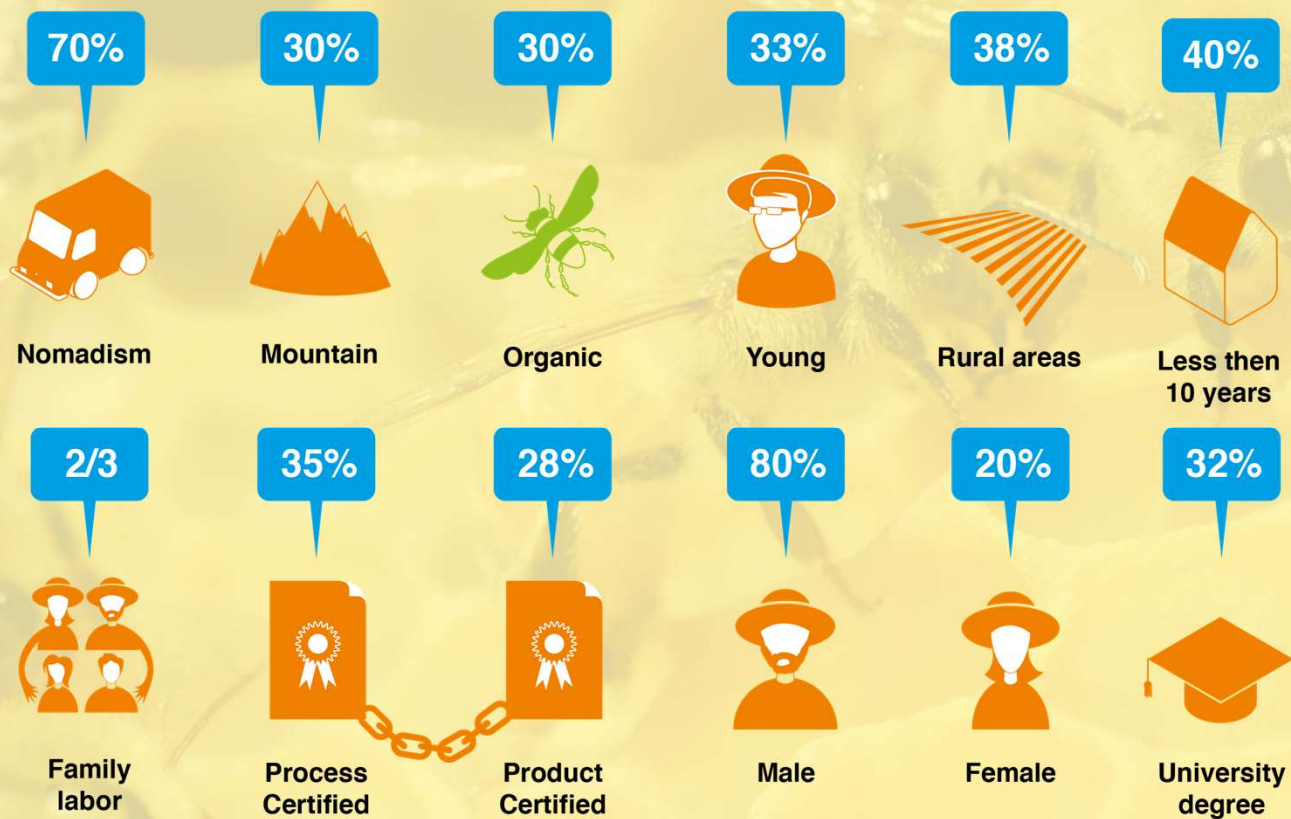
Questionnaires collected for period 2021-2022

Region	Coverage
Valle D'Aosta	100.0%
Piemonte	88.0%
Lombardia	72.7%
Trentino Alto Adige	16.7%
Veneto	47.1%
Friuli Venezia Giulia	70.0%
Liguria	8.3%
Emilia Romagna	15.0%
Toscana	31.6%
Marche	60.0%
Umbria	18.8%
Lazio	24.4%
Abruzzo	52.2%
Molise	92.3%
Campania	50.0%
Calabria	29.0%
Puglia	78.8%
Basilicata	120.8%
Sicilia	21.4%
Sardegna	23.5%
Italy	50.5%



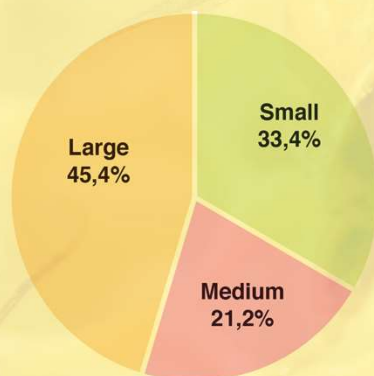
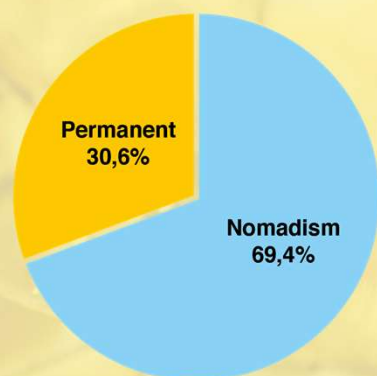
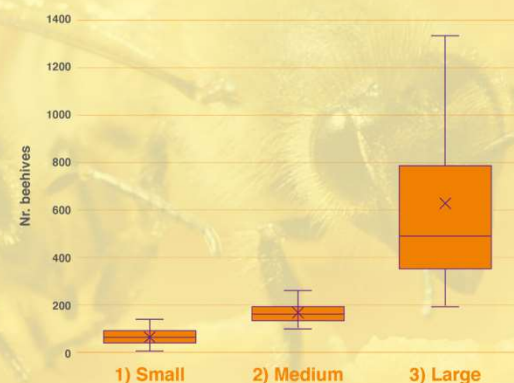
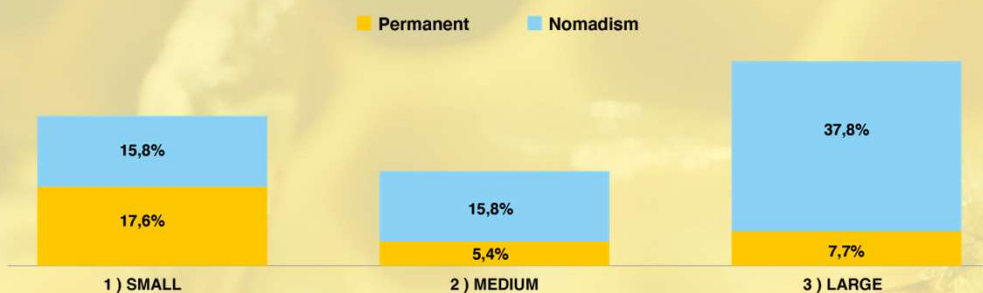
- **Responding farms: 223** about 50% of the sample.
- **Questionnaires validated: 392** (3% of 2020, 48% of year 2021 and 49% of 2022).
- Low coverage at regional level, no possible to apply weight.
- **Outliers (4%)**

Main characteristics of the companies surveyed



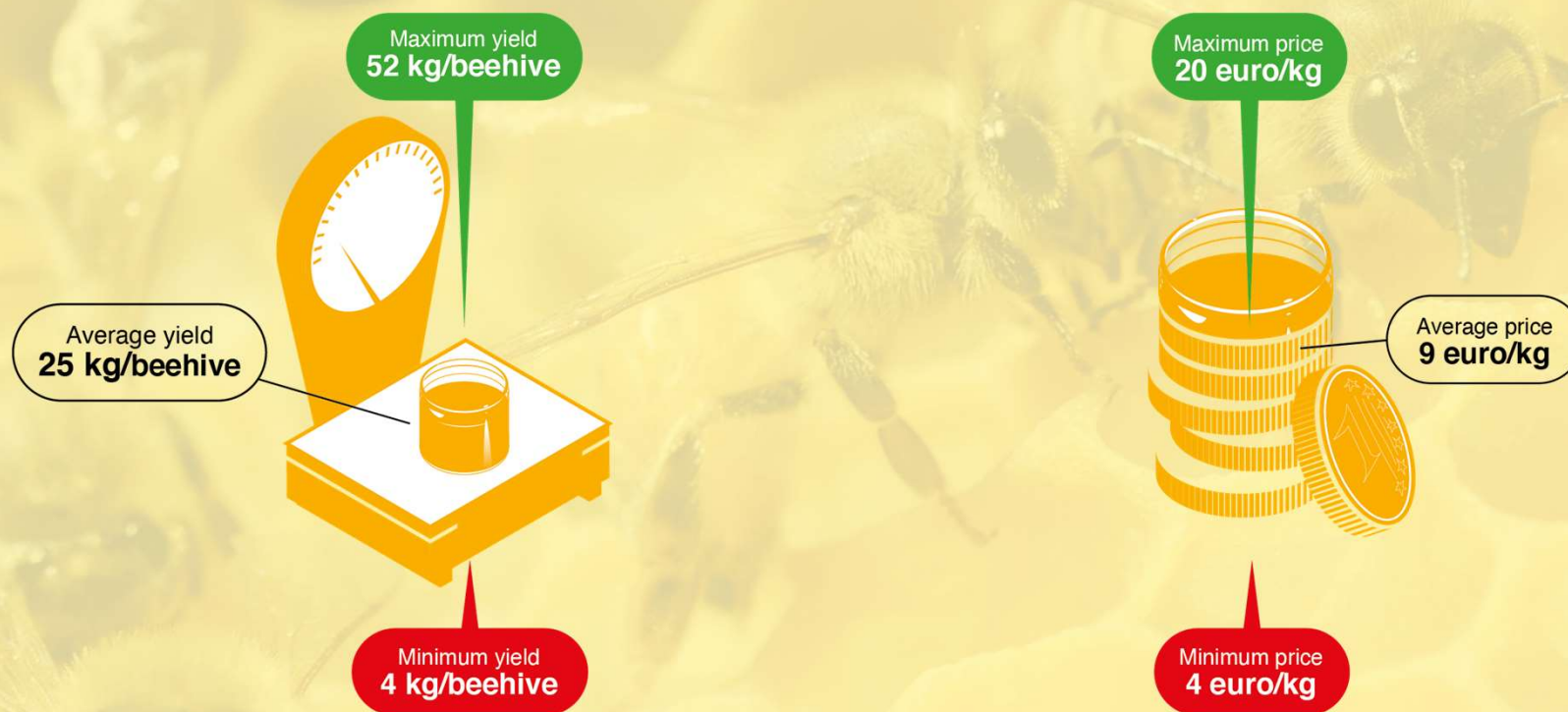
Distribution of farms per typology

Variability of the breeding



Economic size	Standard Output	Number of beehives	Average number of beehives in the sample
1) Small	<= 25.000 euro	Less than 120	65
2) Medium	25.000 – 50.000 euro	120 - 240	162
3) Large	> 50.000 euro	More than 240	490

Yeald per beehive and average price of honey



Production Cost of honey (€/kg) – first level

Variable costs	Nomadism			Permanent		
	1) Small	2) Medium	3) Large	1) Small	2) Medium	3) Large
Travel	1,85	1,43	0,81	0,00	0,00	0,00
Drugs	0,13	0,16	0,11	0,27	0,11	0,26
Nutrition	0,66	0,58	0,57	0,62	0,65	0,94
Insurance & Certification	0,07	0,09	0,03	0,15	0,12	0,02
Energy & Water	0,33	0,30	0,18	0,47	0,42	0,19
Packaging & Marketing	1,09	0,99	0,57	1,54	0,76	0,67
Other Expenses	0,32	0,19	0,21	0,35	0,39	0,18
Variable expenses (production cost 1st level)	4,44	3,73	2,48	3,39	2,45	2,26
<i>Maximum (third quartile)</i>	<i>8,50</i>	<i>6,25</i>	<i>4,22</i>	<i>5,15</i>	<i>3,81</i>	<i>3,91</i>
<i>Minimum (first quartile)</i>	<i>2,53</i>	<i>2,46</i>	<i>1,65</i>	<i>2,14</i>	<i>1,45</i>	<i>1,34</i>

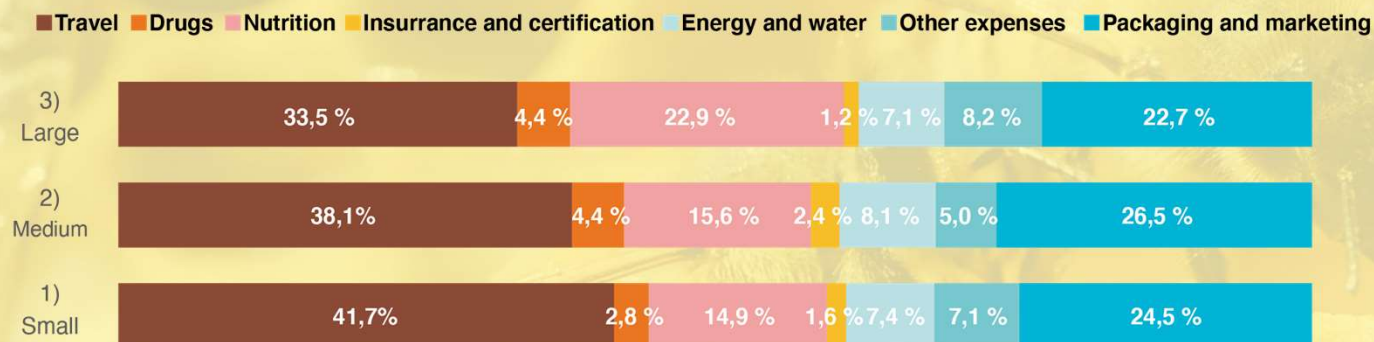
The unit cost of honey production, taking into account only the variable costs, which represents the first level of production costs, is on average 4.13 euros per kg of honey produced. This cost varies greatly depending on the typological class.

On average, for 8% of companies the selling price does not cover variable costs.

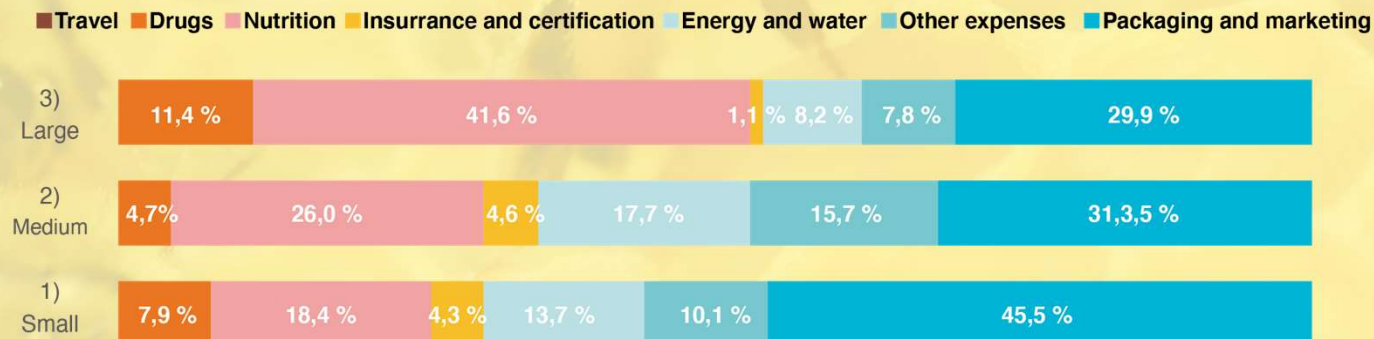
The situation varies depending on the type and size.

Composition of current costs – (first level)

Nomadism



Permanent



Production costs of honey (€/kg) – second level

Variable costs	Nomadism			Permanent		
	1) Small	2) Medium	3) Large	1) Small	2) Medium	3) Large
Workforce and social charges	1,67	0,84	1,02	1,03	0,75	1,01
Rents and general expenses	1,10	0,57	0,46	1,22	0,81	0,40
Depretiation	1,95	1,00	0,83	2,48	1,27	1,10
Ordinary maintenance	0,12	0,12	0,18	0,22	0,16	0,20
Total fixed costs	4,84	2,53	2,49	4,95	2,99	2,72
Total variable costs (1 st level)	4,44	3,73	2,48	3,39	2,45	2,26
Total costs of production (2nd level)	9,29	6,26	4,97	8,35	5,43	4,98

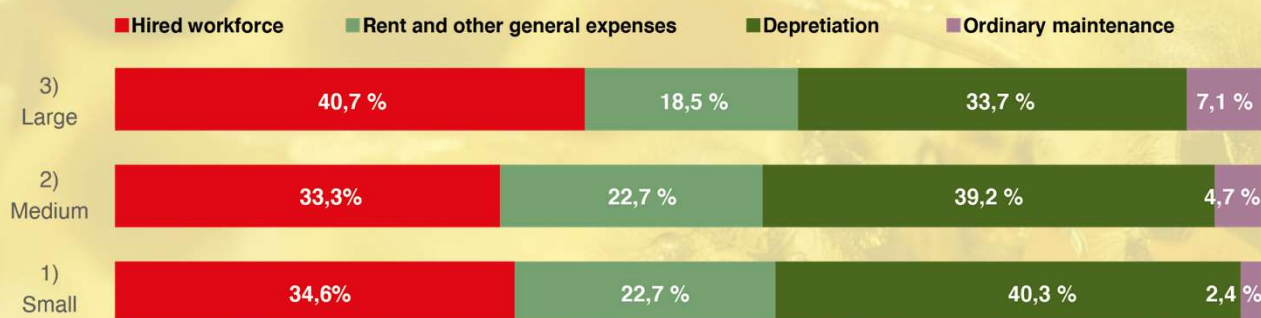
The unit cost of honey production, which takes into account variable costs and general expenses, represents the second level of production costs, ranging from 5 to over 9 euros per kg, depending on the typological class.

On average, for 31% of companies the sales price does not cover second level costs.

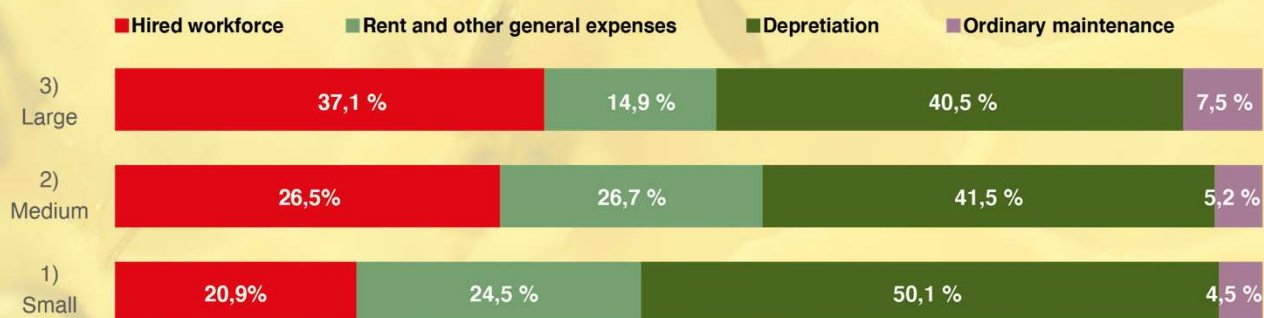
The situation varies depending on the type and size.

Composition of general expenses – Second Level

Nomadism



Permanent



Production costs of honey (€/kg) – third level*

Variable costs	Nomadism				Permanent			
	1) Small	2) Medium	3) Large	Total	1) Small	2) Medium	3) Large	Total
Variable expenses (production cost 1 st level)	81,86	87,32	58,55	62,39	42,70	34,47	18,94	25,56
Variable expenses (production cost 2 nd level)	173,13	148,89	117,24	122,73	119,84	76,52	53,53	68,67
Maximum (third quartile)	227,45	186,55	150,72	--	162,05	104,20	78,30	--
Minimum (first quartile)	108,72	91,15	79,19	--	71,15	46,82	38,70	--

The cost of honey production, which also takes into account family work (third level of C), is on average 13 euros per kg of honey produced. This cost level varies depending on the typological class.

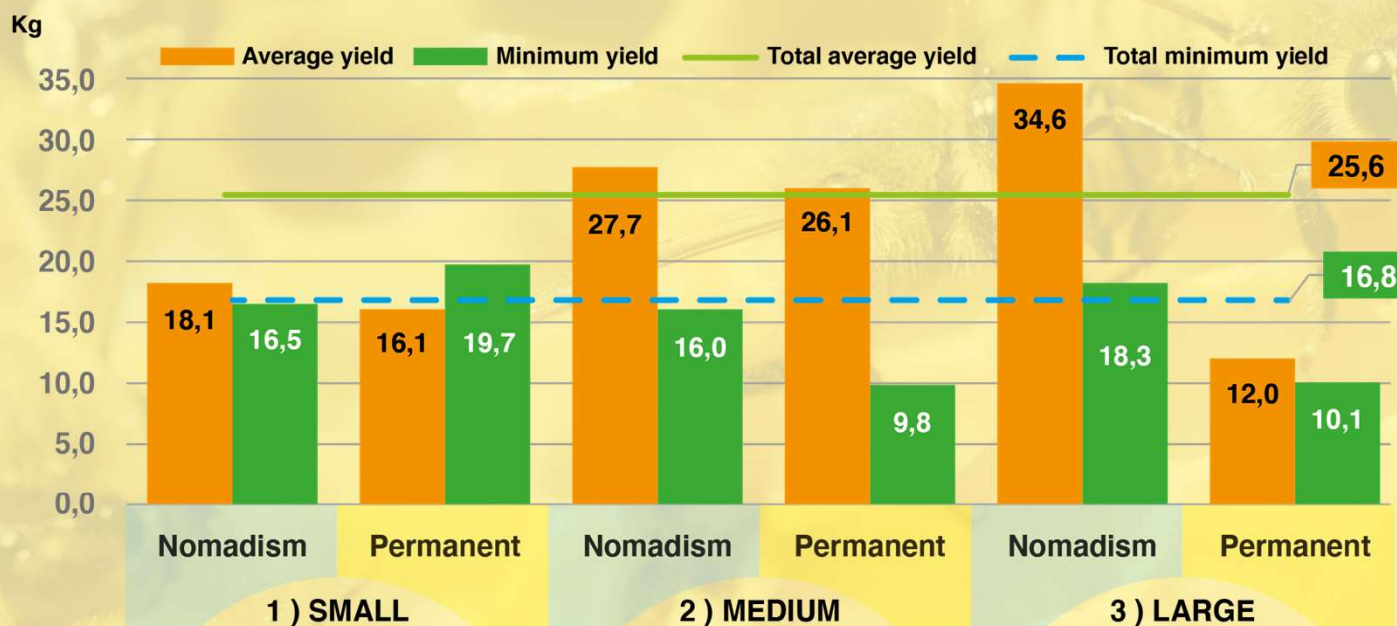
(*) The cost of unpaid labor is determined on the basis of the hours worked by the individual members of the family or relatives of the tenant, the level of professionalism, the gross hourly rate envisaged, for each level (equivalent general worker, specialized worker), in the national contracts of the agricultural sector.

Production cost of honey per beehive (€/beehive)

Variable costs	Nomadism				Permanent			
	1) Small	2) Medium	3) Large	Total	1) Small	2) Medium	3) Large	Total
Variable expenses (production cost 1 st level)	81,86	87,32	58,55	62,39	42,70	34,47	18,94	25,56
Variable expenses (production cost 2 nd level)	173,13	148,89	117,24	122,73	119,84	76,52	53,53	68,67
Maximum (third quartile)	227,45	186,55	150,72	--	162,05	104,20	78,30	--
Minimum (first quartile)	108,72	91,15	79,19	--	71,15	46,82	38,70	--

The 2nd level production cost per hive amounts to 127 euros with a fairly high variability: nomadic companies sustain, on average, a cost of 123 euros/hive, sedentary ones 69 euros/hive.

Average yield of honey to cover production costs



Few other results



TGP Average Beehive



Gross margin per beehive



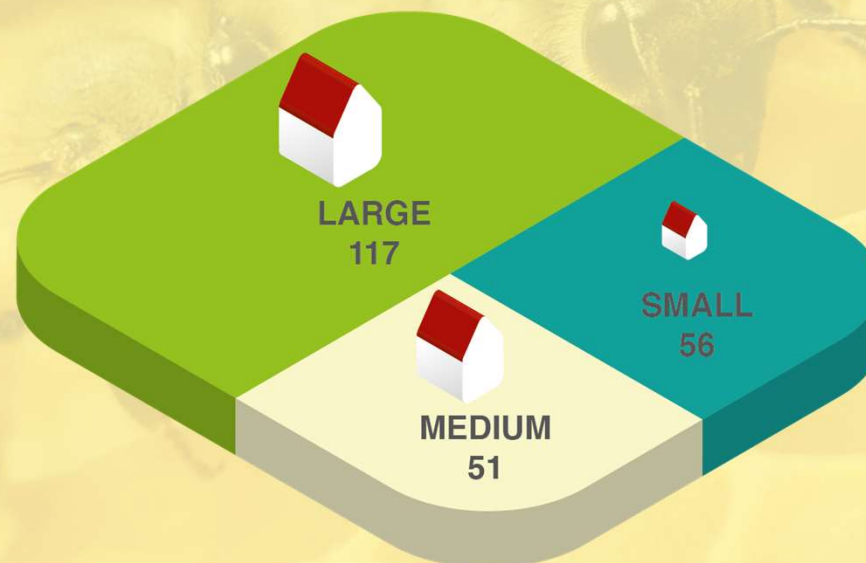
Operating income per beehive

HC survey 2024 (production year 2023): 224 farms

Regional level of coverage of the sample



Distribution of farms per economic size



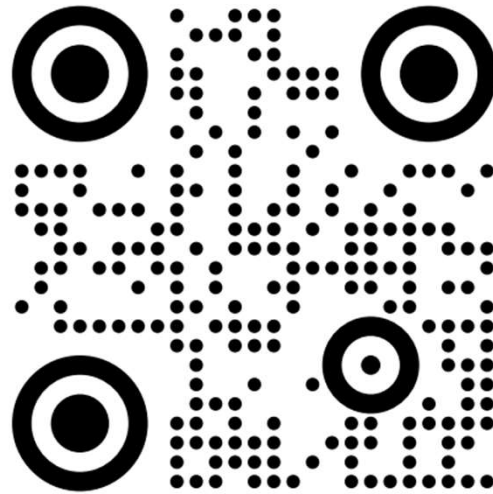


HONEY COST



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Thank you for your attention



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