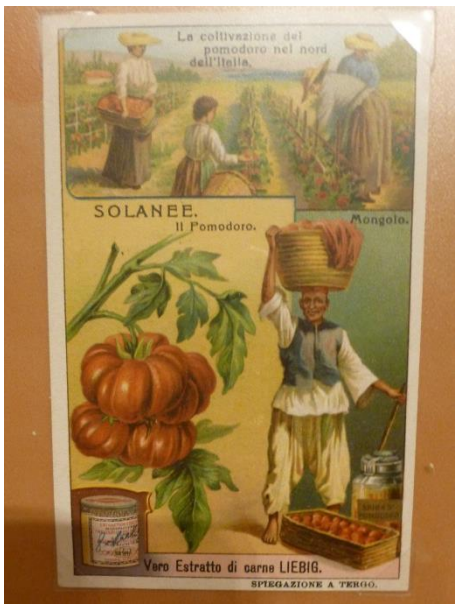
COST Action "Urban Agriculture Europe": STSM – End of mission report

Zoe Heuschkel

Tomato-cycle-diary:
An ethnobotanical journey through European Urban Agriculture

31/08/2015-20/09/2015



COST Action “Urban Agriculture Europe”

Tomato-cycle-diary: An ethnobotanical journey through European Urban Agriculture

31/08/2015-20/09/2015

Author: Zoe Heuschkel, University of Applied Sciences Osnabrück

Photos: Zoe Heuschkel

h.heuschkel@hs-osnabrueck.de

Host: Ass. Prof. Dr. Paola Migliorini, Università degli Studi di Scienze Gastronomiche, Bra (To) Italy

COST Action Urban Agriculture Europe is chaired by:

Prof. Dr.-Ing. Frank Lohrberg Chair of Landscape Architecture Faculty of

Architecture RWTH Aachen University

e-mail: science.cost@la.rwth-aachen.de

Professor Lionella Scazzosi PaRID - Ricerca e documentazione

internazionale per il paesaggio Politecnico di Milano

e-mail: parid@polimi.it

This publication is supported by COST.

COST is supported by the EU RTD Framework Programme

Acknowledgements

This work has only been possible with the help and cooperation of many people. First of all, I thank my interview partners for donating their time and willingness to talk to me about their motivation and our shared passion for tomatoes.

I am also grateful for being accepted by my host Ass. Prof. Dr. Paola Migliorini at the University of Gastronomic Sciences in Bra, Italy and financially supported by the COST action Urban Agriculture Europe.

Contents

Figures and Tables

1. Introduction

1.1 Project Summary

The project aims at collecting data in a holistic approach that combines ethnographic data with agronomic data on tomato diversity in European urban agriculture.

Its focus is to understand the reasons why traditional tomato varieties are cultivated in different forms of urban agriculture and to determine which reasons influence producers´ choices in selecting a suitable variety.

In my study I focus on tomato variety in European urban agriculture. Tomatoes account for 14% of world vegetable production (FAO, 2010). It is one of the most popular vegetables in almost every (urban) garden and relatively simple to grow. It also offers a tremendous variety in traditional and heirloom seed availability (German seed saving association 542 varieties; Swiss seed saving association 154 varieties).
There is some interesting research available on tomato diversity (Bauchet 2012, Corrado et al., 2014) but the insights lack the cultural perspective. Their potential of place-making and forming local identities, which are more and more important in the concept of urban and urban oriented agriculture, still lacks attention. It also remains unclear, if the special situation of urban or urban oriented farms has been taken into account.

Especially the context of Urban Agriculture might have the potential to promote traditional, local or historical varieties as a basis for more sustainable consumption and nutrition patterns. It might be possible that informed consumer demand fosters a revival of traditional varieties. Agricultural remainders in urban and peri-urban spaces may function as repositories of (agri-) cultural habits, knowledge, rites and rituals, some of these might also conserve traditional varieties which need to be documented to be recovered. It is also crucial to understand variety choice limitations by various external and internal factors like seed regulations (EU; national); consumers´ preferences and industrial requirements, accessibility, social networks and personal preferences among others to avoid incentives to reduce crop biodiversity (Portis, 2004).

The STSM will contribute to the assessment of crop plant diversity in urban agriculture among Europe which would give valuable insights for the COST UAE Working Groups 1, 2 and 3. As seed is both - an essential input for all kinds of agriculture and a powerful social symbol - we need to understand, what might accelerate or hold up crop biodiversity loss.

1.2 Background

There is a growing global concern about the loss of crop biodiversity as a fundamental resource for agricultural progress and adaptation to future socio-economic, biotic or cultural requirements. The Food and Agriculture Organization of the United Nations (FAO) has estimated that 75% of global crop diversity has already been lost during the last century (FAO, 1996).

The reasons for this phenomena called *genetic erosion* might be institutional (e.g. the introduction of a binding varieties list in Germany in the 19th century), economical (yield related) or cultural (change of food patterns). There might be a plethora of good reasons for the

disappearance of plant varieties but every disappearing variety does not only mean a shrinking diversity of genetic material for breeding, but also a tremendous loss of traditional knowledge connected to it.
As mankind started to settle down and cultivate plants for their diets, they formed the first bottleneck of genetic selection by choosing appropriate varieties to their local necessities and preferences. Every single plant species and variety is a result of this (agri-) cultural tradition and history of human selective choices for thousands of years until the actual modern commercial breeding and commercial horticulture. In case of the tomato, world´s number 1 vegetable (FAO, 2010) for example, modern breeding is selecting traits that favor economic interests like high yields and certain resistances (Bauchet, 2012). Sensory quality and the propagation of traditional low yielding varieties moved out of the commercial scope although still appreciated by consumers and home gardeners.

Apart from its agricultural context, seed always fulfilled social functions. It formed part of local identities connecting to local food patterns and rituals and was a subject to symbolic exchanges which strengthened social ties and relations. Where varieties still form part of local identities or gaining back their relevance, these varieties are cultivated, processed and protected in informal seed systems by individuals or groups. A growing community of such so called *seed savers* can be found in urban and urban oriented agriculture (Dietrich, 2014). They contribute to the conservation of traditional varieties and knowledge. Homegardens are indeed a globally well documented source and sink of plant genetic resources (Salick, 2004). But crop biodiversity in European homegardens and European urban agriculture in general is a still neglected field of research (Bailey, 2009; Galuzzi, 2010)

2. Mission purpose

The explorative qualitative study will showcase and exemplify in some case studies, how tomato variety is perceived, connected with local cultures, promoted or threatened by different actors and factors. Field access will be facilitated and supported by the host institution, University of Gastronomic Sciences in Bra, Italy (Ass. Prof. Dr. Paola Migliorini).

2.1. Research Questions

- What is a traditional variety? How are they used and cultivated? Which beliefs and potentials, traditions, stories etc. are related with the variety?
- Which are external limiting factors of traditional tomato varieties use (European/ national law; accessibility, ecosystem, market, product properties, etc.) in urban agriculture?
- Which are internal limiting factors of traditional tomato varieties use (food patterns, habits, beliefs, preferences, etc.) in urban agriculture?
- How can crop biodiversity conservation and the conservation of traditional varieties “on-city farm” be supported?

2.2 Objectives

The research project collects holistic data which is both, ethnobotanical (narratives, stories, beliefs, concerns, etc.) and agronomical (growing properties, yield, demand, etc.) related to local tomato varieties which are cultivated in Urban Agriculture and Urban oriented agriculture in 4

European countries. The data will be digested and completed with expert interviews (seed saving initiatives) and observations to get the full picture. The host, Prof. Dr. Paola Migliorini, supports the project by making contacts with suitable interview partners and showcases.

3. Research sites and Methods

The project design includes a sample of explorative semi-structured interviews, guided tours on the farms and participatory observations. Data is collected during the surveys by voice recording, photographs and field notes, as well as in a field diary after intervention.

3.1 Selection criteria for case studies and interview partners

Selections of interview partners and case studies have been done in a two-step approach. First step included an online desk research on possible candidates in Germany, Austria, Slovenia and Italy with direct support of the host institution.

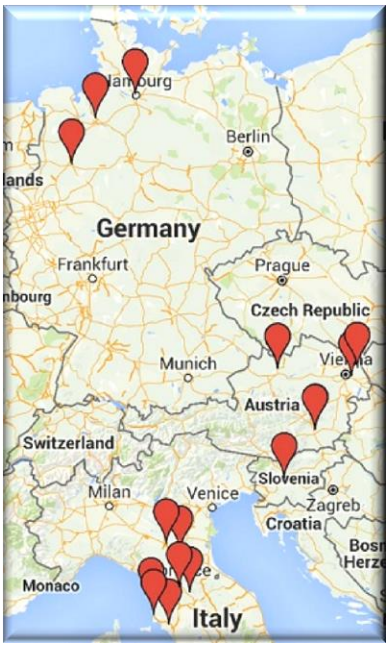


Figure 1: Map of research sites

Criteria for the first step rough sampling of case studies have been:

- Predominant horticultural production (in contrast to livestock or crop cultivation)
- Belongs to the COST UAE category “Urban Farming”
- Produces tomatoes

Criteria for the second step selection of case studies have been:

- Willingness to participate
- Availability in a certain time frame
- Clearly identifies him/herself as either “tomato producer”, “tomato gardener” or “seed saver”

Criteria for selecting the interview partner:

- Is main responsible for the tomato production or at least deeply involved with it

Complementary information was gathered by:

- Participatory observation on market places and supermarkets
- Short interviews with market vendors
- Participatory observation and interviews in allotments and family gardens
- Participatory observation and interviews during a tomato festival
- Interview in a restaurant with focus on local traditional dishes
- Interview and guided tour in an organic plant nursery

3.2 List of case studies, interview partners and observation sites

Nr.	City	Name of place	Type	Form of approach	CS
1	Hamburg	Tomatenretter	Cultural heritage farm	Interview	X
2	Bremen	Gemüsewerft	Local food farm	Interview, guided tour	
3	Osnabrück	Wochenmarkt am Ledenhof	Market	Observation	
4	Osnabrück	Hof Pente	Local food farm/CSA	Interview, guided tour	
5	Linz	Leisenhof Gärtnerei	Local food farm/CSA	Interview, guided tour	X
6	Linz	Hafengärten	Local food farm	Observation	
7	Wien	LoBauerInnen	Local food farm	Interview, guided tour	
8	Wien	Grüner Daumen	Community garden	Interview	
9	Wien	GeLa Ochsenherz	Local food farm/CSA	Interview, guided tour	X
10	Graz	Tomato festival	Festival	Interview, observation	
11	Graz	Allmende Leech	Community garden	Observation	
12	Ljubljana	Main Market	Market	Interview, observation	X
13	Ljubljana	TaBar	Restaurant	Interview	
14	Ljubljana	Allotment Mrs. S.	Allotment garden	Interview, guided tour	
15	Modena	Mercato coperto	Market	Interview, guided tour	
16	Modena	Horti sociali degli anciani	Social farm	Interview, guided tour	
17	Bologna	Cooperativa Arvaia	Local food farm/CSA	Interview, guided tour	X
18	Suvereto	Poggio Diavolino	Leisure farm/ agriturismo	Interview, guided tour	X
19	Vada	Farm Shop	Local food farm	Interview	
20	S. Vincenzo	Fresco nella città	Local food farm/ box	Interview, guided tour	
21	L. Ciuffenna	Azienda Agricola Radici	Cultural heritage farm	Interview, guided tour	X
22	San Caciano	Vivaio Canciulle	Plant nursery	Interview, guided tour	
23	Bagno Ripoli	Mondeggi Bene Commune	Local food farm	Interview	
Nr.	**Organisation**	**Name of expert**	**Type**	**Form of approach**	
I	Arche Noah	Philip Lammert	Seed saver	Expert interview	
II	Semi Rurali	Christina Piazza	Seed saver	Expert interview	
III	VEN	Gerald Krebs	Seed saver	Expert interview	

Table 1: List of case studies, interview partners and observation sites

3.3 Methods

In September 2015, 16 semi- structured qualitative interviews have been conducted with pre-selected tomato producers in four different European countries. The interview guide-lines (see Annex) have been composed of open questions to discover a broad range of possible motivations and to avoid the collection of redundant information. The guide-lines have been pre-tested with 3 students of the University of Applied Sciences in Osnabrück, who already received a horticultural training and/or work in a horticultural business.

Potential interview partners were addressed by email or phone and informed about the research project. At the fixed date, a guided tour was done and an interview of up to 180 minutes was conducted. Whenever possible, the interviewees´ mother tongue was used. Research in Slovenia was done with the help of a language assistant. The interview was recorded by a voice recorder after asking for and receiving permission. Voluntary labor was offered to the participants by the researcher for compensation.

3 explorative expert interviews were done in order to better understand certain attitudes towards tomato varieties. The interviews were focused on topics of seed legislation, history of certain tomato varieties and their typology of heirloom seed users.
Observations on markets and in public and private urban gardens helped to understand the appreciation of tomato diversity in the different cities and countries by vendors and customers. The amount of tomato varieties on display in supermarkets and on market places has been counted. Up to 3 interventions of vendors and customers have been observed per stall, focusing on the request for tomatoes and the flow of information between market vendor and customer on tomato characteristics. The observations were made at market days in the morning hours in order to get a good sample of different tomato varieties before most of the customers had realized their purchases and to avoid rush hours.
After every intervention, observations and own impressions have been noted down in a field diary.

4. Case Studies

4.1 Tomatenretter

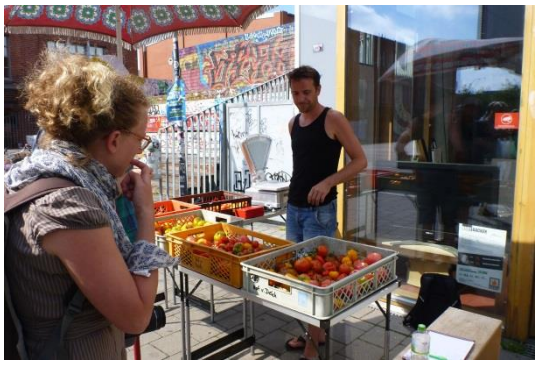


Figure 2: Tomatoes ready for pick-up in Hamburg city

The *Tomatenretter* (tomato saver) project is initiated by the community-run farm *Hof vorm Deich* close to Hamburg. The project wants to display the diversity of tomatoes and tries to inform/ educate the customer.
Supporters can rent a patch of 30x30cm, where a traditional tomato is grown. During harvest season, there is a stall at a central spot in Hamburg where renters can pick up their share of the tomato harvest.
The project cultivates around 120 different tomato varieties from seed. Own seed is saved and multiplied. Individuals for seed production are selected by overall plant health and fruit size.

4.2 Leisenhof Gärtnerei

The Leisenhof Gärtnerei is a small horticultural business at the northern fringe of Linz. The Leisenhof Gärtnerei works according to the standards of Demeter. It is run by a group of four people who are supported by volunteers who work for food irregularly in a daily basis. Products (vegetables) are sold directly twice a week at the own shop. The Leisenhof cultivates more than 20 different tomato varieties. All of them are raised from seed in the own greenhouse. Some seed is also produced for sale. Individuals for seed production are only taken from the second or third level. One reason for the huge variety of tomatoes is also its contribution to quality of work and not getting bored.

Figure 3: Colorful beds at the Leisenhof Gärtnerei

4.3 GeLa Ochsenherz

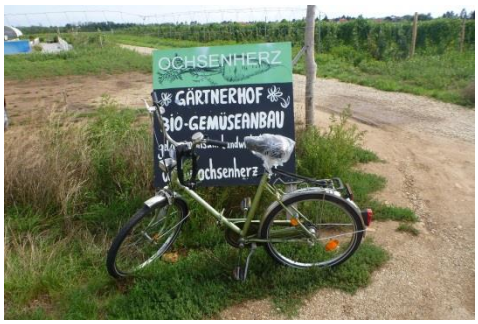


Figure 4: Entrance of GeLa Ochsenherz

GeLa Ochsenherz is a small horticultural business with 5 gardeners and 1 apprentice, 30 minutes outside of Vienna. The economic approach combines a CSA with surplus sales at the market in Vienna.

GeLa Ochsenherz participates in a participatory breeding project of the Austrian seed saving organization Arche Noah. They cultivate more than 30 tomato varieties, traditional and new ones. They also breed new varieties and do experiments in order to adapt varieties to their special needs. Plants are raised from seed in the own greenhouse. Seed is produced and sold online to urban gardens and urban farms.

4.4 Cooperativa Arvaia

Cooperative Arvaia is a CSA close to Bologna, which started in 2013. It is run at the moment by four gardeners, two interns from the University and volunteering members of the CSA who would come on the weekends. They are producing vegetables for around 100 members in Bologna.
In the beginning they tried to work with traditional tomato varieties, but due to a lack of experience with these varieties and a low plant quality, a disease killed almost every tomato plant. Now, resistant F1-hybrids are cultivated with good results. Plants are bought as seedlings from a nursery close by. No seeds are saved or produced.

Figure 5: Rich pumpkin harvest at Cooperativa Arvaia

4.5 Azienda Agricola Radici

Figure 6: Costoluto Fiorentino

Azienda Agricola Radici is run by the Venturi family. Both wife and husband have an additional employment. The farm produces four different tomato varieties, two traditional varieties (Costoluto Fiorentino and Canestrino) and two conventional sauce tomatoes; most of the production is used for the preparation of traditional sauces. Their products are sold in a specialized shop for regional/ local products and on the farmers market. At harvest season some tomatoes are also sold on a farmers market close by. The farmers market is frequented by citizens of Florence and Arezzo.

The traditional tomatoes are cultivated due to their important role as the basis for a traditional dish called “papa di pomodoro”. The dish is prepared in a traditional way which had been recovered by the family. Plants are raised from seed. Seed is saved and multiplied; individuals for seed production are selected by their typical shape.

4.6 Market observations

		Osnabrück	Linz	Ljubljana	Modena	
Vendor sells	Own production	X		X		
	Purchase	X	X		X	
(additional) purchase comes from	region		X	n.a.	X	
	Own country	X	X		X	
	EU	X	X		X	
	Foreign country				X	
Plant is grown from	Seed		n.a.	X	n.a	
	Seedling	X		X		
Number of stalls selling tomatoes		7	3	11	9	
Varieties per stall		1-14	1-5	5-13	4-8	
Varieties on the market		17	9	>50	8	
Customer asks for	Taste	X		X	X	
	Use		X	X	X	
	Maturity	X	X			
	Price		X			

Table 2: Comparison of market observations

5. Preliminary Results

What do producers personally like about a tomato?

Taste is a core criterion for producers´ personal consumption choices, although a very individual one. *Good taste* is characterized as: *fruity, tangy, sweet, juicy, refreshing.* Some producers also prefer special shapes: *heart shape* and colors: *yellow, orange, green and violet* in order to: "*have something special on the plate, which you cannot buy in the supermarket".*

Most producers also say that they would never buy tomatoes from anybody else. They only eat tomatoes during tomato season and refuse eating tomatoes out of season.

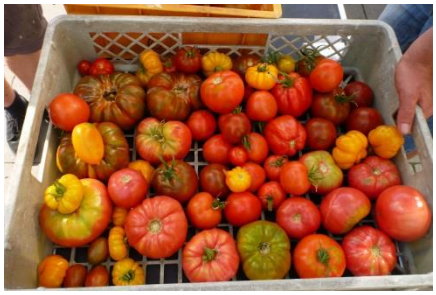


Figure 7: Tomato diversity

If producers decide on the tomato variety for cultivation, it is important that the tomato is resistant to diseases, has a good (*medium size*) shape and matures in several takes. Yield is not as important due to higher prices for "special" tomatoes. Relatively unimportant is resistance to pressure. Most producers say that pressure resistant tomatoes have a *bad, watery* taste *like gum.* Due to direct marketing, good tasting varieties with less pressure resistance can be sold because: "We can tell the customer if the tomato is mature or still needs a couple of days, they do not need to touch."

What do producers think customers like about a tomato?

Many producers say that the consumers demand the *normal, standard, boring* round and red tomato. Sometimes these varieties are not grown but purchased from outside only to have them on display. Producers say that there is a lack of information about tomato diversity. Green and yellow varieties are often left on the shelves because customers do not recognize them as mature. They also think that unusual tomatoes require more customer service and information supply.

Where is seed and/ or planting material coming from?

Most tomato producers harvest their own seed and also sell or swap surpluses. A minority is buying seedlings from a plant nursery. By selecting individuals for seed production only a minority is focusing on standardized variety descriptions. Most producers select for fruit size, plant health and yield. By following individual selection criteria it might be questionable if a variety can be conserved in the original sense.

How can tomato diversity be promoted and preserved?

Tomato diversity can only be promoted and preserved with its related knowledge about cultivation and use. It is remarkable how knowledge about varieties is being lost along the value chain (as seen during observations at the markets). Market vendors, who only bought at the wholesale and sold it at the market, were the least knowledgeable about tomato quality and use. Best informed were producers with a direct marketing approach who raised their plants from own seed, although these producers have the potential to alter the variety by individual selection criteria.

It seems to be obvious that seed is a common good that needs to be sustainably managed and preserved. According to the preliminary findings, market mechanisms might not be suitable for really conserving genetic diversity due to the selection according to (perceived) customer demand and market criteria (yield).

Traditional tomatoes and place making – how does it work?

According to the preliminary analysis of results, there is a certain time factor that determines the connectedness of place, people and (tomato) variety. The interview partners who dedicated a part of their productive actions to the successful cultivation of traditional varieties already acquired a certain flexibility and knowledge about the area and the plot they were working with. They all connected the variety either to a certain growing condition of the area (adapted to climate, adapted to the soil type, resistant to strong winds, etc.) or to a certain traditional dish of the region.

Vice versa, one may conclude that urban farmers at an early stage still need to establish their business and still lack the freedom of experimentation OR are still doing experiments to select suitable varieties to be cultivated. They are not (yet) familiar with the microclimates and literally still need to take root at the plot.

6. Outlook

During the STSM abundant data was collected and still needs to be revised and evaluated. Especially the aspect of seed as a common good, its management, access regulation and conservation deserves a more detailed approach and further research. Together with the host institution the results will be discussed and published in a scientific journal.

A short presentation on the preliminary results will be given during the upcoming COST Training School in Athens in November 2015.

At the beginning of the tomato season in 2016, additional information will be collected to broaden the picture. It will also be interesting to find out more about the growing properties of traditional tomatoes.

Figure 8: Sign at a community-run farm close to Florence

7. References

Aguilar-Støen, M.; Stein R., Camargo-Ricalde, L.(2009):
Home Gardens Sustain Crop Diversity and Improve Farm Resilience in Candelaria Loxicha, Oaxaca, Mexico. Hum Ecol (2009) 37:55–77

Bailey A., Eyzaguirre P., Maggioni L. editors. (2009):
Crop Genetic Resources in European Home Gardens. Proceedings of a Workshop, 3-4 October 2007, Ljubljana, Slovenia. Bioversity International, Rome, Italy.

Bauchet, G., Causse, M. (2012):
Genetic Diversity in Tomato (Solanum lycopersicum) and Its Wild Relatives, Genetic Diversity in Plants, Prof. Mahmut Caliskan (Ed.), ISBN: 978-953-51-0185-7, InTech, Available from: http://www.intechopen.com/books/genetic-diversity-in-plants/genetic-diversity-in-tomatosolanum-lycopersicum-and-its-wild-relatives

Bellon, M. R. (2004):
Conceptualizing Interventions to Support On-Farm Genetic Resource Conservation. World Development Vol. 32, No. 1, pp. 159–172, 2004

Corrado, G., Caramante, M., Piffanelli, P., Rao, R. (2014):
Genetic diversity in Italian tomato landraces: Implications for the development of a core collection Scientia Horticulturae Volume 168, 26 March 2014, Pages 138–144

Dietrich, Kristina (2014):
Urbane Gärten für Mensch und Natur eine Übersicht und Bibliographie. BfN, Bonn

FAO (1996):
Report on the State of the World´s Plant Genetic Resources. Rome: Food and Agricultural Organization of the U. N.
FAO (2010):
Plant genetic ressource for food and agriculture. Rome, Food and Agriculture Organisation of the United Nations

Galluzzi, G., Eyzaguirre, P., Negri, V.(2010):
Home gardens: neglected hotspots of agro-biodiversity and cultural diversity. Biodivers Conserv (2010) 19:3635–3654

Gilbert, P.R. (2013):
Deskilling, agrodiversity, and the seed trade: a view from contemporary British allotments. Agric. Hum. Values (2013) 30:101–114. DOI 10.1007/s10460-012-9380-z

Negri, V., (2003):
Landraces in central Italy: where and why they are conserved and perspective for their on-farm conservation. Genet. Res. Crop Evol. 50, 871—885

Portis, E., Acquadro, A., Comino, C., Lanteri, S.(2004):
Effect of farmers' seed selection on genetic variation of a landrace population of pepper (Capsicum annuum L.), grown in North-West Italy. Genetic Resources and Crop Evolution 51: 581–590, 2004

Salick, J., Brown,W., Posey,D.(2004):
Home Gardens and Agrobiodiversity. Economic Botany, 60(3):304-304. The New York Botanical Garden

Subedi, A., Chaudhary, P., Baniya, B. Rana, B., Tiwari, D., Rijal, B., Sthapit, and Jarvis, D.(2003):
Who Maintains Crop Genetic Diversity and How?: Implications for On-farm Conservation and Utilization. Culture & Agriculture; Vol. 25, No.2 Fall 2003

Turner, Victor (1982):
From Ritual to Theatre: The Human Seriousness of Play. New York: Performing Arts Journal Publications

Wood, D., Lenne, J. (1997):
The conservation of agrobiodiversity on-farm:questioning the emerging paradigm. Biodiversity and Conservation 6, 109-129 (1997)

Methodological Textbooks and articles:

Atteslander, P. (2006):
Methoden der empirischen Sozialforschung. Erich Schmidt Verlag, Berlin

Axhausen, K. (2005):
Activity spaces, biographies, social networks and their welfare gains and externalities: Some hypotheses and empirical results. 290. IVT, ETH Zürich, Zürich

Carrasco, J.A. Hogan, B. Wellman, B., Miller, E.J. (2009):
Agency in Social activity Interactions: The Role of Social Networks in Time and Space. Dutch Royal Geographical Society KNAG 99: 5: 562-583

Devine-Wright, P., Fleming, P.D., Chadwick, H, (2001):
Role of social capital in advancing regional sustainable development, Impact Assessment and Project Appraisal 19 (2), pp 161-167

Spradley, J. (1997):
The Ethnographic Interview. New York

Annex: Questionnaires

Survey for Seed Savers

Date: Place: Interviewee:

1. What is important for a perfect tomato from your point of view?

2. Do you remember a key moment that made you into a person that is deeply interested in tomato?

3. Do you buy tomatoes? Which kind of tomato do you buy and why?

4. Do you sell tomato? What do you think customers appreciate most from a tomato?

5. Why are you a seed saver? What motivates you doing that? How did you start?

6. Where do you get your seed? How do you choose the varieties from the seed provider? Did you ever have problems to get the desired seed?

7. Do you conserve own seed? How do you select the individuals to take seed from?

8. Which varieties do you like best? What do you know about the variety? (Where is it coming from?; Which properties does it have?) How do you grow/harvest/use it? Can you tell me a delicious recipe especially for this variety?

9. What do you think, why are some traditional varieties still in use and why are some already lost?

10. Do you think, all of them need to be conserved? Why/ why not? How would you suggest doing that? Which positive examples of variety conservation do you already know? Do you cooperate with commercial tomato producers?

11. Do you sell seed? Did you ever have problems in selling your seed?

12. What do you think about European seed legislation? For whom is it good/ bad?

13. Do you think there is a link between this place and the traditional tomato varieties? How would you describe it? How is your connection to the place and the tomato?

14. Is there anything else you would like to add? Do you have questions for me?

15.

- Thoughts after transect walk:
- My overall impression and personal state of mind:

Survey for market oriented tomato producers

Date: Place: Interviewee:

1. What is important for a perfect tomato from your point of view?

2. Do you remember a key moment that made you into a person working with tomato?

3. Do you buy tomatoes for own consumption? Which kind of tomato do you buy and why?

4. What do you think customers appreciate most from a tomato?

5. Where do you get the seed/ seedlings? How do you choose the varieties from the seed /seedling provider? Are there restrictions, problems in provisioning, you are suffering from?

6. Do you conserve own seed? How do you select the individuals to take seed from?

7. Which varieties do you like best? What do you know about the variety? (Where is it coming from?; Which properties does it have?) How do you grow/harvest/use it?

8. Is there one or more traditional variety/ies in your garden (orto)? What are the benefits/ constraints of this variety?

9. Can you tell me a delicious recipe especially for this variety?

10. Do you think there is a link between this place and the traditional tomato variety we were talking about? What could it be? How is your connection to the place and the tomato?

11. Do you think, it needs to be conserved? How would you suggest doing that? Do you know any seed saving organizations/ persons?

12. Is there anything else you would like to add? Do you have questions for me?

13.

- Thoughts after transect walk:

- Overall impression and personal state of mind:

Survey for Tomato Gardeners

Date: Place: Interviewee:

1. What is important for a perfect tomato from your point of view?

2. Do you remember a key moment that made you into a person that is deeply interested in tomato?

3. Do you buy tomatoes? Which kind of tomato do you buy and why?

4. Do you sell tomato? What do you think customers appreciate most from a tomato?

5. Where do you get the seed? How do you choose the varieties from the seed provider? Did you ever have problems to get the desired seed?

6. Do you conserve own seed? How do you select the individuals to take seed from?

7. Which varieties do you like best? What do you know about the variety? (Where is it coming from?; Which properties does it have?) How do you grow/harvest/use it?

8. Is there one or more traditional variety/ies in your garden (orto)? What are the benefits/ constraints of this variety?

9. Can you tell me a delicious recipe especially for this variety?

10. Do you think there is a link between this place and the traditional tomato variety we were talking about? What could it be? How is your connection to the place and the tomato?

11. Do you think, it needs to be conserved? How would you suggest doing that? Do you know seed saving organisations/ persons?

12. Is there anything else you would like to add? Do you have questions for me?

13.

- Thoughts after transect walk:

- Overall impression and personal state of mind:

COST- the acronym for European COoperation in the field of Scientific and Technical Research- is the oldest and widest European intergovernmental network for cooperation in research. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to cooperate in common research projects supported by national funds.

The funds provided by COST - less than 1% of the total value of the projects - support the COST cooperation networks (COST Actions) through which, with EUR 30 million per year, more than 30.000 European scientists are involved in research having a total value which exceeds EUR 2 billion per year. This is the financial worth of the European added value which COST achieves.

A ”bottom up approach“(the initiative of launching a COST Action comes from the European scientists themselves), ”´a la carte participation“(only countries interested in the Action participate), ”equality of access“(participation is open also to the scientific communities of countries not belonging to the European Union) and ”flexible structure“(easy implementation and light management of the research initiatives) are the main characteristics of COST.

As precursor of advanced multidisciplinary research COST has a very important role for the realisation of the European Research Area (ERA) anticipating and complementing the activities of the Framework Programmes, constituting a ”bridge“ towards the scientific communities of emerging countries, increasing the mobility of researchers across Europe and fostering the establishment of ”Networks of Excellence“ in many key scientific domains such as: Biomedicine and Molecular Biosciences; Food and Agriculture; Forests, their Products and Services; Materials, Physical and Nanosciences; Chemistry and Molecular Sciences and Technologies; Earth System Science and Environmental Management; Information and Communication Technologies; Transport and Urban Development; Individuals, Societies, Cultures and Health. It covers basic and more applied research and also addresses issues of pre-normative nature or of societal importance.

To whom it may concern

Paola Migliorini, PhD
Assistan Professor in Agronomy and Crop production

Object: Confirmation by the host institute of the conducted Short Term Scientific Mission with in EU Cost Action "Urban Agriculture Europe"

I herewith confirm that Ms. Heike Zoe Heuschkel completed her Short-Term Scientific Mission called: *Tomato-cycle-diary: An ethnobotanical journey through European Urban Agriculture* in cooperation with various urban gardens in the region as part of COST Action "Urban Agriculture Europe" (TD1106).

With best regards,

piazza Vittorio Emanuele, 9 fraz. Pollenzo - 12042 Bra (Cn)
tel. +39 0172 458511, info@unisg.it, www.unisg.it