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**LET'S CULTIVATE DIVERSITY!**

**LCD! 2013 in Peccioli (PI) 12-15 June 2013**

## The picture



*SOLIBAM - Puglia, Italy*

*Farm days 2011 - visit to experimental plots #photo R. Franciolini/RSR*

**On the cover**

*in the upper right Let's Cultivate Diversity! 2009, France - bakery lab*

*#photo C. Pozzi/Wwoof-Italy*



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# Editorial

## Let's cultivate diversity!

Very warm greetings to all of you who are reading this editorial. We are honored, along with the Peccioli Municipality, to have many farmers and non-farmers, in our Tuscan hills. You will find a bit of everything, from "strange" grains to "stone" mills, and you will certainly meet up with and be among many lovely people. It is much needed.

We are delighted that in a few years (seven or eight) the issue of old and ancient varieties of grains has invaded countryside of half the world: not in large extension, but certainly a little bit everywhere. What is even more satisfying, however, is that this return to old varieties of grains has not only spread these plants in many small fields, but has also led to the presence of whole grain cereals, breads, pasta and various biscuits and crackers on the tables of many families careful about their health. This is something very strong. It means that fewer fields will be fertilized and chemically "helped", it means that many people will be able to eat cereals in spite of gluten intolerance, it means that many people with cholesterol problems, diabetes and blood sugar problems... know that with a healthier diet they can solve most of their problems. It means that, little by little, we will have more tourists attracted by an even nicer landscape and a highly creative, healthier Italian cuisine.

A good project - because this is what it is - a good project which so many people have been working on, and are still working hard to realize it. People who gave up various business opportunities and above all who gave up so much of their free time. We truly regret we cannot mention the names of these people who have given so much but we are afraid, since they are so many, of forgetting a few names and it would be a grave injustice. You will have the welcome opportunity to meet them and to get an idea of how many positive people we are surrounded by. By the way, since we are in Tuscany, a heartfelt thanks to Professor Stefano Benedettelli. Thank you all and see you soon, June 12<sup>th</sup> is approaching quickly.



On the right Giovanni & Rosario Floriddia in their mill

#photo S. Floriddia/CTPB

# Giovanni & Rosario Floriddia



Peccioli (PI) 2012, Floriddia Farm - choice of the best ears in the experimental plots #photo R. Franciolini/RSR



# Grains cereal & wheat farmers



**I**t was an article on the "Repubblica" local page, one of those articles that we read only in Summer, well documented and passionate, which introduced me to Stefano Benedettelli in July 2003. He was looking for farmers who were trying to grow and to multiply Verna, Sieve and Andriolo seeds. He already had a thorough knowledge of the Verna seed, even from the nutritional point of view.

So it was that we started spreading the word around on the WWOOF, Asci and Foro Contadino networks, we began to move around Tuscany getting to know farmers and giving them the first packets of seeds to multiply. Some people were given enough seeds to allow us to do the first bread-making trials.

In 2007, a meeting was arranged by the farm "Floriddia" that many people attended. There were tasting and comparison of 7-8 different types of bread, the dough being made with pure flour and with a blend of flours. In the same year "Rete Semi Rurali" was founded.

In 2009 the adventure of the "Centro per la Biodiversità Alimentare Villa Pertusati di Rosignano" began. It was an ongoing wholehearted commitment in that area: it started with concentric circles and made me look up and convey my energies towards a good part of the regional territory with a few cross-border escapades.

In June 2009 I had the chance to take part in the first edition of Let's Cultivate Diversity in France, an event of remarkable cultural and human involvement. A seminar with so many people of different cultures, all intent on sharing passions, skills and issues in plenary meetings as well as in various practical bread and pasta making workshops. Sharing generous and richly varied meals, lively conversations and relaxing with a nice glass of artisan beer in hand while listening to live music, strolling in the fields uncovering mysteries and surprises, a catalog full of life.

Faces, expressions, multiple languages, a mix of sensations and memories of great power.

There I met Salvatore Ceccarelli and learned of his participatory selection activities, while listening to the opinions and hard learned wisdom of his coworkers the farmers. I finally saw the main characters of "Les bles d'or" at work, a movie that I had already arranged to distribute in dozens of copies and already shown on several occasions.

I had the chance to taste freshly baked Georgian, Norwegian, Jordanian and Palestinian bread. I saw rye bread prepared by a Berlin cooperator, and polenta from Romania next to polenta from Vicenza and from Venice.

As soon as I got back from France, I faced up to a harvest of Gentil Rosso wheat cultivated by a neighbor. In fact, during a cognitive survey of the territory with Maria Francesca Nonne, I had met and got to know Rossella Stura, manager of an organic food shop in Livorno and a biodynamic amateur farmer just for pleasure. She was dragged in by Cristiano Cei, he himself a keen cereal farming scholar, as she had purchased a few kg of Gentil Rosso from a farm in Puglia and got a handful of Senator Capelli and *thuranicum* seeds. It was indispensable to find a destination for that grain, otherwise it was destined to be pecked by Rossella's hens: a few days with friends who volunteered to do the mowing, organizing a shelter for the crops, threshing with a small machine provided by Prof. Benedettelli, who as always was tireless in participating in the work with his colleagues.

It was precisely during those days that I began to sense the enormous participatory potential of seed multiplication realized by volunteers who would have no other return than having contributed to the revival of the seed supply chain. In this area many people offered time and land for seed multiplication.

Today there is an increasing number of farms that are approaching traditional wheat growing and, above all, I would like to mention here the out of ordinary experiences that emphasize the social and economic value of these crops.

In Vecchiano a group of families that cooperate with the weekly bread making production for the local consumers group (GAS) decided a few years ago to dedicate themselves to the cultivation of public land leased from the company in charge of the management of common property ("Usi Civici"). This choice is far from seeking financial gain. The keen desire is to lay the foundations for the slow reconstruction of the seed multiplication chain within their territory and to send a strong signal for the reappropriation of seeds. In fact every year this little "community" organizes sowing and reaping days for a variety of seeds that need to be multiplied, all the work is done manually.

At Semproniano the cultural association "La Piazzoletta" has decided to enliven a wheat farmers organization of local tradition, initially cultivating "Autonomia B and Abbondanza", by involving restaurant owners and bakers in the area getting them to use and process flour. The aim, from a tourist point of view, is to enhance the area by restoring cultural and economic dignity of farmers' labor. The work of "La Piazzoletta" has been generating in the Prato area as well an experimentation and cultivation movement of old varieties of wheat and their use in bread and pasta production. The Prato Municipality has provided some public land for the experimentation that "La Piazzoletta" carries out in collaboration with Prof. Stefano Benedettelli.

In Val di Cornia, following the Memorandum of Understanding undersigned by the University of Florence, Provincial Administration, Municipalities of the Val di Cornia, "Società Parchi Val di Cornia" and the "Val di Cornia Bio / Coordinamento Toscano Produttori Biologici" Association, producers started farming 20 ha within the Sterpaia park. The purpose of the project is to study the improvement of wheat seeds suitable for growing on salty soil and of adequate rotations: the company that will be encharged of the project will include farmers, restaurateurs and civil society representatives.

The challenge is the financial sustainability of the experimental seed production project, the recreation of the local supply chain and raising awareness among local economic representatives, students and citizens on the value of healthy local food.

In Montespertoli, through the efforts of the Municipal Administration and a number of partners - mills, bakeries and farms - the "Pane di Montespertoli" project was created, aimed at producing and processing cereals intended for bread making in the area. Thanks once again to the efforts of Stefano Benedettelli and the Pachamama Association, the culture and diffusion of traditional wheat seed is becoming more and more popular.

There are certainly many other initiatives that are unfolding in Tuscany - and not only - mainly due to the positive influence of Consumers Groups and Farmers Markets. Remember that this movement has taken such a strong hold due to relations between researchers, farmers, producers and consumers who are learning to work together for the realization of a common project: the right to healthy food and sustainable farming practices.

# Claudio Pozzi



Let's cultivate diversity! 2009, France - breadmaking  
#photo C. Pozzi/Wwoof-Italy

# The future of breeding: farmers participation!

**S**ome of the major problems the scientific community is facing nowadays are biodiversity, climate change, poverty and hunger. These problems are connected to each other, even if they are often addressed separately.

By now, it is clear that the climate is warming up and it is very likely that in many areas the frequency and intensity of droughts and climate variability will continue to increase. Some of the most sweeping changes and direct effects of climate change in the forthcoming decades will affect agricultural and food systems [Brown & Funk, 2008].

Both the agricultural and food current systems are unsuitable in coping with the impact of climate change because of their great uniformity they are based on. In fact, although the most respected scientific journals that remind us with almost weekly deadlines of just how much biodiversity is essential for life on this planet [Cardinale et al, 2012], both biodiversity in general and agrobiodiversity in particular are still declining.

The decline in biodiversity has been largely brought about by industrial standardization that led agriculture to be based on a few varieties, often related to one another, which respond uniformly to fertilizers, herbicides and pesticides. It is estimated that there are 250,000 species of plants, of which about 50,000 are edible: in human diet we actually eat only 250 of these and 15 of them provide 90% of our caloric intake. Only three - rice, corn and wheat - provide 60%. These three crops are those in which conventional breeding has dramatically reduced genetic diversity.

Beyond biodiversity decline in our major crops, there has been a progressive concentration of seed control in the hands of a few large companies: from 2008, ten companies control 67% of the global commercial seed market, and four of them control 49% of it. These same four companies also control 53% of the pesticide market.

The agricultural development model that has led to this decline in biodiversity and therefore in food safety, embraces the Green Revolution philosophy, a term coined in 1968 to specify the agricultural development strategy based on the joint use of improved varieties and inputs: fertilizers, pesticides, herbicides, irrigation and mechanization. This model eliminated or attenuated the differences between agronomic environments that were very different and far between each other, so that one or a few varieties could yield well anywhere. Poor farmers who could not afford fertilizers, fungicides, herbicides, irrigation and mechanization, did not receive any benefit from this scheme.

Further, improved varieties do not have the organoleptic properties of local varieties. For this reason it frequently turns out, as still happens today for example on the coast of the Caspian Sea, that farmers grow modern varieties to sell the product on the market, while they grow local varieties for their household consumption.

With the ever growing trend of privatization of plant breeding programs, there has been a worrying decline not only in genetic diversity of our crops, but also in the knowledge that the farmers have been accumulating for millennia in modifying crops, spreading them throughout the world, adapting them to new climates, soils, cultural practices and uses. Many international organizations, recognizing the value of agricultural biodiversity for the future of humankind, are promoting the preservation of local varieties and of their wild relatives seeds in germplasm banks. These banks are fundamental as a last resort, where to retrieve the seeds in case of natural disasters, but their effect is not only to freeze the seeds, but to freeze evolution as well.

Participatory plant breeding (PPB) is considered a form of breeding able to increase agricultural production and therefore food at a farm level, without diminishing, but rather increasing agrobiodiversity.



This is because it relies on the advantages of direct selection, namely a selection in the target environment (including organic and low input systems) in combination with the participation of farmers (men and women) in all key decisions. This method of breeding puts farmers at the center of the whole process of developing new varieties, including seed production. This corresponds with one of the main recommendations of the International Report on the rights to food done by the United Nations Special Rapporteur: "Putting farmers at the center of research through participatory research such as participatory plant breeding", pg. 22 [De Shutter, 2009].

A participatory breeding program is breeding program in which the selection is conducted in the target environment with the participation of consumers [Ceccarelli, 2009]. The main difference between conventional and participatory breeding is that in the first priorities, objectives and methods are decided by one or more researchers without the participation of farmers, while the second gives equal weight to the opinions of farmers and researchers. To carry out a PPB program it is worth mentioning that there are no fixed paradigms. For the same crop, even within the same country, different models may be needed depending on the genetic structure of the variety to be obtained (pure lines or populations), and the final use of this crop (market or direct consumption).

A particularly useful model in self-pollinated crops (such as wheat, rice, barley, teff, sorghum, lentils, chickpeas, a number of fruit trees) presupposes that scientists create genetic diversity - mostly by crossbreeding, often using local varieties - and that they reproduce the first two generations in research stations producing enough seed for testing in farmers' fields. Once the plants are grown in farmers' fields, researchers measure the features that are important for the farmers - plant height, length of the ears, the grain size - they analyze and store electronic copies of all data obtained. Farmers regularly assess this research material, sometimes they are the ones who measure the traits of these plants, they decide what to choose and what to discard, name the selected varieties, produce and distribute the seeds of the chosen varieties.

This process is carried out in farmers' fields in four steps: 1. initial trials, 2. advanced tests, 3. elite testing, 4. large scale tests. Depending on the crop and the country, step 1 is made up of 50 to 160 varieties. When there is a great diversity pool, and when the farmers in several villages have different preferences, the initial trials that they plant in these villages include different varieties. The total number of the varieties tested in initial trials in the same country can therefore be quite large, and in some cases reaches up to 400 different varieties tested every year. Stages 2, 3 and 4 include the varieties that have been selected from stage 1, 2 and 3 of the previous year, respectively. The selection process consists of a visual selection (with a quantitative score system) done by the farmers (both men and women) before harvesting and a second selection based on the results of statistical analysis. In fact, the data of all testing are analyzed using appropriate statistical methods, therefore generating the same amount and quality of information as conventional testing.



*Puglia, 2011 - S. Ceccarelli #photo R. Franciolini/RSR*

A key aspect of this process is that, once completed one cycle, the selected genealogical lines are then used as parental elements in a new cycle of recombination and selection, exactly as in conventional breeding. The difference is that these lines have been selected by farmers and may vary from one place to another. This recurrent cycle has important effects on farmers, who see their own choices appreciated and valued, and thus creates a strong sense of ownership of the entire process. Furthermore, it also has major effects not only on the enormous diversity, due to the selection of several different varieties in different locations, but also on the temporal diversity given by the rapid turnover of varieties.

Participatory plant breeding is, or was, used in 47 countries of 5 continents, and dealt with 26 different crops including 13 cereals, 6 legumes, 3 root or tuber crops, 2 vegetables and 2 industrial crops. One of the weaknesses of participatory breeding program is that it assumes that there is a research institution who constantly feeds the process with new genetic material.

Since the attitude of researchers and institutions towards participatory plant breeding is generally negative, unpredictable and changeable, we introduced the concept of evolutionary genetic breeding [Suneson, 1956 / Ceccarelli et al, 2010] which is based on populations with high genetic variability, including mixtures of local varieties, which can be directly handled by farmers in a multitude of environments where they slowly evolve and adapt. It is like providing farmers with a living and evolving seed bank. One of the main advantages of evolutionary breeding is its simplicity and its enormous potential for crop adaptation - any crop - to climate changes and to any other agronomic changes that might be necessary to bring in in the future.

Participatory breeding programs are nowadays active in Jordan and Iran on wheat and barley, in Ethiopia on barley, and in Italy, where durum wheat, common wheat, and barley populations are grown in 12 regions.

In 2013, CRA-ORA, an horticultural research unit of the Italian Agricultural Research Council in Monsampolo del Tronto (AP, Marche, Italy) constituted two populations, one of tomato and one of zucchini (squash), which were sown in four regions to start an evolutionary breeding program. Evolutionary breeding was successful in increasing yields, the target for farmers in marginal regions. A cost-benefit analysis showed that, in participatory plant breeding, cost/benefit ratio is four times more advantageous than in conventional breeding.

In conclusion, the challenge of participatory plant breeding is to combine increased productivity with increased cultivated diversity, thereby helping to solve the problem of world hunger and the problem of resistance to diseases, pests and climate changes, and consequently the health of consumers. The results of participatory breeding projects are helping to maintain and increase genetic diversity, which is essential for the continuous evolution and adaptation of the varieties, the farms and rural communities in many parts of the world. These programs are helping to increase awareness and thereby the empowerment of both men and women farmers.

Learning by farmers of the mechanisms that are the basis of varietal constitution, just as the ability to produce their own seed, will ultimately make them autonomous towards to the large seed industry.

# Salvatore Ceccarelli



# Wheat and its impact on health

Over the past fifty years, farming had to deal with specific quality requirements for food produce from the processing and sales industry. It is noteworthy that there is no single definition of "quality". The concept of quality covers, in fact, several aspects ranging from the technological to the health and operational sectors.

For years the parameters have been defined according to productive and technological characteristics, almost entirely ignoring the aspects related to nutrition. Despite wheat has been a staple of human diet for thousands of years, only in the last ten years wheat has been studied for its beneficial properties. Today, with the new analytical technologies, we can fully assess an agricultural produce, also considering the secondary metabolites which are often responsible for taste, smell and functional traits of a staple food.

Health care costs the State must sustain for citizens suffering from chronic diseases could be greatly diminished by a healthy and proper diet. Scientific knowledge has widely demonstrated that many diseases - obesity, diabetes, cardiovascular and respiratory problems, enteropathy, high cholesterol and even certain types of cancer - depend on a faulty and unvaried diet. It is clear that nutrition plays a primary role in public health. All it takes is appropriate attention when choosing primary products and a little judgment when it comes to dressings, thus avoiding a number of problems which are easily solved by a healthy-balanced diet.

In Italy the use of wheat-based products is very high: we find them at every meal, so it is necessary that the choice of products is well thought out.

Breads should be made with organic flour, preferably whole-grain or partially whole-grain, to get all the beneficial compounds that are found in the outer part of the kernel - usually eliminated by refining processes - and increase your fiber intake.

The flours should come from landraces or old varieties which have, as has demonstrated by several scientific studies, a more varied content of secondary metabolites than the modern varieties and a lower gluten content.

The leavening should be done with mother yeast (starters yeast) which makes the bread more digestible. As regards pasta, for a good digestion and to prevent tedious stomach bloating, the drying process should be carried out at low temperatures so as not to "cook" the pasta before it goes into the pot. Drying at low temperatures prevents certain chemical reactions which make the pasta difficult to digest for everybody, which in certain subjects may cause important symptoms.

**Scientific knowledge has widely demonstrated that many diseases depend on a faulty and unvaried diet: nutrition plays a primary role in public health**

From a technological quality perspective the two most important compounds found in the wheat kernel are:

1. **Starch.** It is the most abundant compound and affects the ability of the flour to absorb water during kneading, the leavening time of the dough, its shelf life, texture and consistency of the soft interior crumb.
2. **Proteins.** They are responsible for the technological properties of flour. The caryopsis (kernel) proteins are: albumin, globulin and reserve proteins (gliadin and glutenin localized in the endosperm). After kneading, these last proteins form the gluten, therefore they are essential in determining the technological properties of flours. Glutenin determines elasticity of the dough, whereas the gliadins confer viscosity to gluten. The properties of wheat flour depend on the type and amount of gluten contained.





Peccioli (PI) 2013 - Lesson in the field on LCD! 2013 plots #photo R. Franciolini/RSR

The compounds which give wheat a high nutritional value are:

- cellulose, pentosans, mineral salts and proteins - found in the outermost layer of the caryopsis
- essential fatty acids, vitamins and minerals - found in the germ
- reserve proteins and starch - found in the innermost part of the caryopsis, the endosperm.

The food industry prefers working refined flours, deprived of their bran and germ to maximize the technological "yield" and increase their shelf life. But we should also evaluate other secondary metabolism compounds found in wheat, those called *functional* or *bioactive*.

The consumption of these molecules is beneficial for human health because they activate metabolic reactions resulting in protection against the accumulation of compounds harmful to our health. From a functional quality point of view, wheat has many biologically active phytochemicals such as polyphenols (flavonoids, lignans, isoflavones), carotenoids, tocopherols and fiber.

**In modern varieties of wheat there is a higher concentration of protein sequences stimulating the immune response of individuals predisposed to coeliac disease. The percentage of affected people is estimated around 1% but is increasing**

Many of these components are concentrated in the embryo and in the external caryopsis layers. Unfortunately, these parts are removed by milling in order to obtain white flour for bread and by-products. The massive use of products made from refined flour has contributed to creating some dietary nutritional deficiencies as well as leading to obesity, cardiovascular diseases and type 2 diabetes. These health problems have been defined as *metabolic syndrome*. Epidemiological studies found that the use of whole grains has a crucial role in the prevention of chronic diseases, such as cardiovascular diseases and certain types of cancer [Schatzkin et al, 2007]. Health benefits arise from the intake of fiber and phenolic compounds. The strong antioxidant activities of the latter group of compounds acts against free radicals, which are the major cause of illnesses such as cancer and cardiovascular diseases [Adom et al, 2002 / 2003]. In fact, the link between cancer, diabetes, arthritis, cardiovascular problems, autoimmune diseases and chronic inflammation has been studied very much in recent years: a diet which has natural antioxidants is effective for lowering the risk of contracting diseases [Li, 2008].

Wheat, especially wholewheat, because of its low glycemic index, has many positive effects on human health. The use of wholewheat leads to a drop in blood pressure in people with mild hypercholesterolemia problems: it lowers cholesterol levels [Behall et al, 2006].

Vada (LI), 2009 - S. Benedettelli #photo C. Pozzi/Wwoof-Italy



Another class of compounds, are the phenolic lignans, has important pharmaceutical functions: antitumor activity [Hirano et al, 1996], anti-inflammatory, immunosuppressive, cardiovascular, antioxidant and antiviral. A diet rich in lignans may have a protective effect against problems caused by the release of estrogen, such as osteoporosis [Mazur et al, 1998]. A recent research verified the distribution and qualitative profile of lignans into 4 modern varieties and 6 ancient varieties of common Italian wheat [Dinelli et al, 2007]. Significant differences were found between the old varieties that have shown higher and more variable levels of these compounds than in the modern ones.

The coeliac disease is enteropathy triggered by the ingestion of gluten in genetically predisposed individuals. When these people ingest gluten, it causes an immune reaction that results in an intestinal mucous wound that can cause changes in the assimilation. In modern varieties of wheat there is a higher concentration of protein sequences stimulating the immune response of individuals with genetic predisposition to coeliac disease [Van den Broeck et al, 2010]. The flours obtained from modern varieties have a higher gluten content than the older varieties. This, in the long term, makes the organism sensitive to this protein. Furthermore, with an excess of protein the body struggles to turn it into simpler compounds, so that toxins accumulate and cause intolerances that appear clearly with a swollen abdomen, atopic dermatitis and also pains in the bones and joints. The percentage of people with celiac disease is estimated to be around 1% but this figure is increasing. There is also a significant increase in sensitivity to gluten, which was first diagnosed as *irritable bowel syndrome*. Its symptoms include pain and abdominal swelling, as well as headaches and eczema. The causes of the sharp increase of the disease are to be found both in the considerable quantity and type of gluten ingested during the weaning period and in the development of more sensitive and specific diagnostic tests [Logan, 1992].

In the past, the celiac condition was considered a childhood disease, but from the 1990s to date there has been a significant increase of adult subjects [Fasano et al, 2001].

In Ireland and in the UK, where changes were made in the usual contemporary diet, as a delay the introduction of gluten to infants during weaning [Farrell et al, 2001], the increase rates of the disease in shown a significant decrease, arousing great optimism [Fabbro, 2007].

It is necessary, thus, to analyze the virtues of old wheat varieties for their functional characteristics and to develop food chains using these types of flour. This argument has often been interpreted as a willingness to come back to the good old days, as not accepting innovation and as "being behind the times". Such criticism, however, is based on a food evaluation system that is out of date.

Nowadays analysis techniques can quickly assess all the aspects related to protecting public health, also allowing to carry out breeding programs aimed at obtaining varieties that meet both technological and public health welfare requirements.

# Brunella Trucchi e Stefano Benedettelli

**Explanatory schemes following: Tab 1-2-3 ➤**



Peccioli (PI) 2013 - Lesson in the field on LCD! 2013 plots  
#photo R. Franciolini/RSR



**Tab 1 CLASSIFICATION OF COMMON WHEAT FLOUR**

TYPE	SIFTING	ASHES	CELLULOSE MAX.	DRY GLUTEN MIN.
<b>Flour type 00</b>	50%	0,50 max.	-	7
<b>Flour type 0</b>	72%	0,65 max.	0,20	9
<b>Flour type 1</b>	80%	0,80 max.	0,30	10
<b>Flour type 2</b>	85%	0,95 max.	0,50	10
<b>Whole grain flour</b>	100%	1,40 min./1,60 max.	1,60	10

**Notes:**

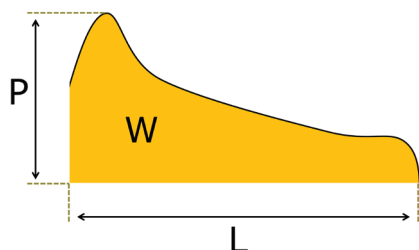
- Quantities are referred to 100 g of dry matters
- Maximum humidity 4,50%

**Tab 2 CLASSIFICATION OF DURUM WHEAT FLOUR**

TYPE	ASHES	CELLULOSE MAX.	PROTEINS CONTENT MIN.
<b>Semolina</b>	0,70-0,85	0,20-0,45	10,50
<b>Semolato</b>	0,90-1,20	0,85	11,50

**Notes:**

- Quantities are referred to 100 g of dry matters
- Maximum humidity 14,50%

**Tab 3 QUALITY ACCORDING TO FOOD INDUSTRY!****Notes:**

- W = gluten strenght  
P = tenacity  
L = extensibility

ITALIAN CATEGORIES	W	P/L	PROTEINS
<b>Frumento di forza (FF)</b>	≥300	1,0 MAX	≥14,5%
<b>Frumento panificabile superiore (FPS)</b>	≥220	0,6 MAX	≥13,5%
<b>Frumento panificabile (FP)</b>	≥160	0,6 MAX	≥11,5%
<b>Frumento biscottiero (FB)</b>	115 MAX	0,5 MAX	11,5 MAX



# From LCD! 2009 France to LCD! 2013 Italy

In 2009 Réseau Semences Paysannes organized in France the first edition of Let's Cultivate Diversity! (LCD!) at Cecile and Jean François Berthelot's farm, in Port Sainte Marie, near Bordeaux.

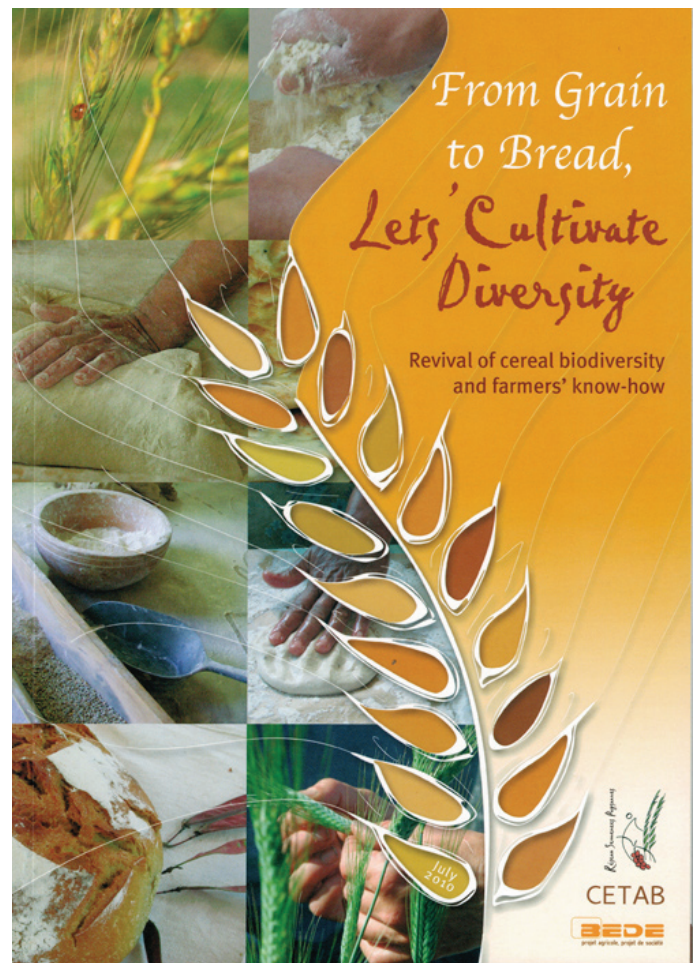
At the event were present about 150 participants: cereal growers, bread and pasta makers, researchers coming from all the European - and a lot of Mediterranean, too - countries.

LCD! 2009 lasted three days and it was as a deep exchange of experiences and knowledges, beyond cultural and linguistic differences, to bring out the richness of the different agricultural and food traditions.

Rete Semi Rurali took part in the 2009 event with practical bread and "polenta" making workshops.

Afterwards, RSP published a book gathering together voices and recipes from the three days, and even a movie telling the event. It is possible to buy them on the association website.

# Riccardo Franciolini



The story of Let's Cultivate Diversity! 2009 was gathered in book and DVD > [www.semencespaysannes.org/nos\\_publications\\_et\\_videos\\_118.php](http://www.semencespaysannes.org/nos_publications_et_videos_118.php)



Let's cultivate diversity! 2009, France - visit to experimental plots and catalogue field #photo C. Pozzi/Wwoof-Italy



## Short news from Rete

**4 April** The Ministry of Health has followed up on the request and the dossier drawn up by the CRA (*Council for Research and Experimentation in Agriculture*), asking the European Commission for an emergency suspension of the authorization of enactment in the cultivation of MON810 maize seed in Italy and in the rest of the European Union

**6 May** Submitted by DG-SANCO proposal for a new regulation for seeds and propagation material in Europe. The negotiations go to the European Parliament and the Council

**6 May** Researchers of the former CRAB will follow the work on agricultural biodiversity launched in recent years thanks to an agreement with AIAB Piedmont. The group will form the technical and scientific reference point for the association and for all those who wish to approach organic farming

### Campaign for Family Farming

The People's Campaign for family farming follows its gradual and steady work. On a regional level, thanks to the work of local associations, two draft laws have been submitted in Piedmont and Tuscany to simplify the legislation on product processing, while in Emilia Romagna these goals have been included in the work of "Rete di Economia Solidale". At a national level, starting with the M5S Parliamentarians' proposal, work has restarted even with other parliamentarians, for the development of a draft framework law on peasant farming, to which we further specific regulations can be linked # RS

### Local seeds, legal seeds!

During the last meeting of the Piano Nazionale Sementiero per l'Agricoltura Biologica held on May 15th, it finally seems that the stalemate regarding the regulatory definition on farmers rights to sell seeds of conservation varieties has been unblocked. Officials from the Ministry have suggested a simple letter from the Ministry clarifying the type of requirements farmers should respect and the authorization procedure to follow. They are a VAT number, registration with the Chamber of Commerce and an antimafia authorization. AIAB is committed to send an official statement to the Ministry and, after, an interpretation letter # RB

## Calendar

**End of June** Farm days SOLIBAM, Italia. As in recent agricultural seasons between June and July AIAB within the SOLIBAM project is organizing a series of visits to the experimental plots in farmers' holdings involved in the project

➤ [www.solibam.eu](http://www.solibam.eu)

**13-15 September** SAVE Foundation Annual Conference in Urnäsch - Switzerland (CH), about Safeguard Agricultural Varieties in Europe, in which the Italian association RARE takes part

➤ [www.save-foundation.net](http://www.save-foundation.net)

**20-22 September** Let's Liberate Diversity! Basil, Switzerland. 8th edition of the meeting on Seed legislation organized by the European Coordination Let's liberate Diversity!

➤ [ildforumch2013.liberatediversity.org](http://ildforumch2013.liberatediversity.org)

**24-28 September** Fifth session of Governing Body of the FAO Treaty in Plant Genetic Resources for Food and Agriculture, in Muscat - Oman

➤ [www.planttreaty.org](http://www.planttreaty.org)

### Bookscorner

**Minima Ruralia** *Seeds, peasant farming and a return to the land*

**Author** Massimo Angelini

**Publisher** Pentàgora Edizioni € 13

**Produrre i propri semi** *Handbook for increasing biodiversity and independence in the cultivation of food crops*

**Author** Salvatore Ceccarelli

**Publisher** Libreria Editrice Fiorentina € 8

**Contadini per scelta** *Experiences and stories of new agriculture*

**Authors** Giuseppe Canale, Massimo Ceriani

**Publisher** Jaca Book € 18



# Marco Michahelles

## and the Frassineto Cereal Institute



In Tuscany, from the beginning of the 1900s, the administration of Alfredo Conti and Massimo Di Frassineto, put into practice the task of selecting and producing the Gentil Rosso soft wheat seed at the Tenuta di Fontarronco in Arezzo province. In 1921 on the premises of the Frassineto Farm they founded the "Istituto di Cerealicoltura A. & M. Di Frassineto", with laboratories, warehouses, experimental and multiplication fields in their farms Frassineto, Fontarronco, Amorosa. In 1921 Dr. Marco Michahelles, born in Florence on November 23<sup>rd</sup> 1896, and an Agricultural Sciences graduate at the University of Perugia, was called to direct it.

He worked for a short time at the "Unione Produttori di Grano da Seme Rieti" (Rieti Wheat Seed Producers Union), at that time at odds with the "Associazione Riproduttori Sementi di Nazareno Strampelli" (Nazareno Strampelli seed reproducers Association), beginning a course of crosses and selection on Rieti wheat, adopting as a starting point the Rieti Todaro fam. 11. Based on his further studies in agricultural genetics with Francesco Todaro, founder of the "Società Bolognese Produttori Sementi", he studied and applied the methods of genealogical selection. He was entrusted by Di Frassineto, initially, to develop the research on the Gentil Rosso starting immediately with a program of crossbreeding applied to this landrace. The guidelines foresaw the *in situ* identification of new lines derived from Gentil Rosso which would certainly adapt to more favorable environments than their original provenance, to ensure yield stability and hardness of their parental in the Tuscan farmers environment and, at the same time, to give the new breed features and benefits of high productivity, good quality, resistance to lodging, to rusts and powdery mildew, and early maturation and ripening. The first crosses were made in 1922, at the same time as the development of mass selection, and they carried on using the best pure lines of Gentil Rosso as starting material for crossbreeding, isolated with mass selection, and a few varieties of Italian and French lodging resistant wheats that had been studied before and selected according orientation tests in the area. It was only after he visited Sweden and the Åkarp Institute in 1925, where he learned the Nilsson Ehle method, which he himself described as "truly ingenious", that he undertook the long and majestic work that enabled him to obtain the new crosses with a "practically perfect trait stability".

Michahelles' two top varieties, marketed from 1932 onwards, were the Frassineto 405, obtained through selection and the Santamaria obtained by crossbreeding. In 1933 and 1934 respectively, the "Aquila" (in its I and II forms) and the Fontarronco were diffused. In 1938 "Impeto" and "Autonomia" immediately had a rapid widespread diffusion, Impeto particularly in the fertile Po Valley and Autonomia in central Italy, covering a total area of over 200,000 hectares. In 1949, with the "Rondine", a series of "precocious-hardy-lodging resistant" wheats were publicized: "Freccia", "Grifo" and "Mara" via a quick and significant propagation throughout national territory found their highest concentration in distribution areas not very different from those of their origin. These varieties were all adapted to both fertile plain lands and hill, medium-to-low fertile lands. Straw was shorter, more elastic, resistant to lodging and useful for bedding in stables. These wheats were resistant to cold and to late frosts that occur in valleys and alongside rivers, such as in the Valdichiana area, and resistant to fungal diseases such as powdery mildew and rusts. Michahelles's work at the Di Frassineto, which ended in 1954, represented a key starting point for agricultural development and economy in the Val di Chiana, in the whole Tuscany and not only. It improved the diet and living conditions of a population who used to eat rye, potato or maize bread on a daily basis and glimpsed white bread only on rare occasions.

# Luciana Becherini

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