BUSINESS PLAN

CEN/TC 338
Cereal and cereal products

EXECUTIVE SUMMARY

Business environment

Cereals are overwhelmingly the major source of food supplies for direct human consumption. Their world production currently reaches a record level, with 2.568 billion tonnes[1] in 2016/2017, among which 29% of wheat (roughly, more than a third being destined to food use and a fifth to animal feed), 42% maize (nearly two third being used in animal feed), 19% rice, 6% barley, 2% sorghum. Over 352 million tonnes have been exchanged last year worldwide and 662 millions stocked. The high level of supply and availability of cereals drives the world prices down. Main producers of cereals (including rice) are China, United States, European Union, India, Brasil and Russia.The main importing countries are China, Japan, Mexico, Egypt, Saudi Arabia, South Korea and Vietnam.

Thanks to good yields, the European Union's cereal gross production reached in 2017 its higher level since 2014, with 315 million tonnes including common wheat (46%), maize (20%), and barley (20%). 61% of the total use of cereals in Europe is dedicated to animal feeding. Over 35 million tonnes are exported (among which 24 millon tonnes of wheat) whereas 18.5 millons are imported. The main European producers are currently France, Poland, Germany, Spain, Romania, Italia, United Kingdom and Hungary.

Confidence in the results of analysis or sampling is the basis for a fair trade between stakeholders and for guarantying the quality of the products for an optimal utilization.

Benefits

The development of a corpus of common analytical rules, accepted and recognized by all stakeholders, contributes to facilitate the trade exchanges within the European Community for cereals and cereal products. Availability of scientifically developed methods, supported by objective data, will make easier the compliance with requirement given in European Regulations. Analytical methods properly specified in standards may become tools for European actors to improve their world market share. More than 40 standards have therefore already been published under the CEN/TC 338's responsibility.

Priorities

Technological and sanitary characteristics of the cereals and cereal products must be assessed at each step. The main aim is to prepare and publish "robust" methods of sampling or methods of analysis, validated through ring-tests and including fidelity data for cereals and cereal products. Among the list of daily performed analytical methods, the Technical Committee has chosen to focus at first instance on the criteria identified in European Regulations and also on criteria required for commercial transactions. It also works to share the standards with ISO level in order to facilitate the global trade of these products.

[1] Sources: FAO 2017 and International Grain Council

1. BUSINESS ENVIRONMENT OF THE CEN/TC

1.1. Description of the Business Environment

The CEN/TC 338's scope is to standardize test and charaterisation methods for cereals and cereal products including physical, chemical, biochemical and physico-chemical methods and pending sampling methods, terminology and product specifications.

1.1.1. Political factors

The *Codex Alimentarius Comission* (CAC) has been established by the Food and Agricultural Organization of the United Nations (FAO) and the World Health Organization (WHO) to protect the thalth of consumers and ensure fair practices in food trade. The *Codex Alimentarius* is a collection of internationally adopted food standards, guidelines and codes of practice. It follows the principle that consumers have a right to expect their food to be safe, of good quality and suitable for consumption. In this regard, the safety and essential quality of internationally traded food is of paramount importance. For some years, the *Codex Alimentarius* has been referring to ISO or CEN standards proposed by its members. It is therefore important for cereal and cereal products actors to build a consistent set of standards harmonized at CEN and ISO levels.

At the European level, the White Paper on Food Safety published in January 2000 by the European Commission confirmed that the legislator pays a particular attention to the quality of foodstuffs intended for human consumption and animal feeding, and guarantees of the free circulation of safe and secure food and feed in the internal market. For instance, maximum limits of residues such as pesticides, heavy metals, mycotoxins have been fixed.

Nowadays, the European regulations define characteristics of cereals as well as, sometimes, the means for assessing them. However, all the criteria used in commercial transactions are not covered by European regulations. Furthermore, when the methods are specified in the regulations, they refer to documents which were formerly produced by international professional associations, such as ICC (Association for Cereal Science and Technology), AOAC International (Association of Analytical Communities) and AACC International (non-profit association dealing with cereal grain science). Since the creation of CEN/TC 338, European standards are now mentioned in some regulations, such as:
- the European regulation on intervention procedures for cereals: Commission Regulation EU N°742/2010 amending Regulation (EU) N°1272/2009 laying down common detailed rules for the implementation of Council Regulation N°1234/2007 as regards buying-in and selling of agricultural products under public intervention,
- regulations on contaminants in cereal products: Commission Regulation (EU) N° 519/2014 amending Regulation (EC° N°401/2006 as regards methods of sampling of large lots, spices, and food supplements, performance cirteria for T-2, HT-2 toxin and citrinin and screening methods of analysis Text with EEA relevance.

In order to facilitate the reference to standards in European regulations, European Commission and in particular DG AGRI (Department of Agricultural and Rural development) is in liaison with CEN/TC 338.

1.1.2. Economic factors

As mentioned above, some cereals are exchanged through forward markets, with public interventions. In case of over-productions, the European Union buys products in order to stabilize prices, the stocks being sold later. This system has been suppressed successively for barley and maize (in 2006), but still exists for wheat.

Storage requires good-quality products. Furthermore, quality is important as well in the current context of high availability of cereals and therefore quite low prices, since it can provide arguments to maintain a price.

In this context, preoccupations focus on good practices of harvesting, storage, transports, handling, transforming products, as well as knowledge of the grain characteristics (through analysis), so as to be able to set up efficient specifications enabling trading and/or storage.

According to IGC, within the next five years, the production may be outpaced by a grouth in grain demand, consumption increasing mostly from food (mainly wheat) and feed (mainly maize). The world total grain trade should grow, in a context of rising food and feed demand in Asia and Africa.

The development of the markets multiplies the requirements of the increasingly diverse intervening parties. This is all the more visible in the developed countries where the markets become more and more segmented, as a function of the different requirement in finished products and processing. In addition, for cereals, the traditional purchasing boards ("government markets") in non-E.U. member states are disappearing in favour of direct commercial negociations.

This trade generates more and more regulatory, therefore compulsory, aspects, as well as normative and consensual aspects, which are voluntary. The European and international context, still more complex concerning technical appraisal of products and services and more liberal in the management of the markets, requires a high ability to adaptation from the profession, especially through a harmonization policy of the cereal standards.

The absence of common standards in different countries or regions can contribute to the creation of "technical trade barriers" and lead to commercial disputes which are a source of wasted ressources and money. This applies to intra-community trade which would be facilitated by the existence of a body of common rules accepted by everyone.

Besides CEN and ISO, professional associations such as the ICC, AOAC and AACC above mentioned are developing and publishing documents describing methods of analysis for cereal products. While their texts generally benefit from wide recognition within professional circles, their drafting method and status are not always considered as sufficiently robust to support their use in the event of commercial arguments. Documents published by separate bodies may especially not be entirely identical for the same criterion. In order to act as the reference texts, the documents must be drawn up within a structure that is neutral, impartial, and recognized by all partners within the cereal chain as the sole European reference body. Standardization offers this possibility at European level with CEN, and international level with ISO. Standards are therefore reference documents initiated by industries, laboratories, sometimes by state services of consumers,

reaching consensus by working together. Stakeholders of various interests and needs are represented in the national standardization committees which follow the CEN/TC 338 structure.

Created in 1959, ISO/TC 34/SC 4 – "*Cereals and pulses*" offered the first framework for standards in that field. However, the building of the European market revealed a need of simplification of the relations between the European countries. At ISO level, European opinion could not always be fully taken into consideration. This is why France, in 2001, asked for the creation of the CEN/TC 338 structure in order to build the Europen market in relation with the European regulation, while still contributing to the drafting of ISO standards coherent with European preoccupations. This organization simplifies the activites of analysis for companies and brings confidence in the trades. More than forty standards have already been published under the responsibility of CEN/TC 338.

Some new preoccupations are appearing nowadays on authenticity, visible through the creation onf these structures in 2017:
- CEN WS/86 – *Authenticity in the feed and food chain – General principles and requirement*. This workshop aims at developing consensus-based recommendations for definitions of key terms and concepts, and to outline principles and basic requirements related to food authenticity. The secretary is Norway.
- CEN/BT/FACG, dedicated to coordinate works between existant technical committees. It refers to topics such as loyalty, frauds, conformity of assertions, consumer confidence.
- *Food Integrity and Food Authenticity* (CCFICS23) working group of the *Codex Alimentarius*. Presidated by the Islamic Republic of Iran, co-presidated by Canada and the European Union, this structure will clarify notions such as "food integrity", "food authenticity" and "food fraud", evaluate existing texts and may propose some future works.

1.1.3. Technical factors

Standardization of methods of analysis used for cereals is based on both classical and new methods. The latters are often more respectful for the environment, by using alternatives to solvents, acids, reducting contaminants, …

CEN/TC 338 members also decided that all the methods standardized at European level must be validated by ring-tests, in line with the requirement in the ISO 5725 standards dealing with "accuracy (trueness and precision) of measurement methods and results.

1.1.4. Environmental factors

Cereal crops as well as their transformation are really involved by environemental aspects. However, since the scope of CEN/TC 338 is mainly oriented towards methods of analysis and sampling, the consideration of environmental protection is mainly based on:
- the use of non-reactive contaminants;
- rational use of energy and water;
- waste management.

1.2. Quantitative Indicators of the Business Environment

The following list of quantitative indicators describes the business environment, in order to provide adequate information to support CEN/TC 338 activities. The information comes from the European Commission (https://ec.europa.eu) – *Short-term Outlook for EU agricultural markets – Winter 2017*, and International Grains Council (www.igc.int) – *Grain Market Report*.

	EU-28					% variation			
	2013	2014	2015	2016e	2017f	16/15	16 vs 5-year av.*	17/16	17 vs 5-year av.*
Common wheat	136 207	149 675	152 514	135 400	144 115	-11.2	-3.3	6.4	2.6
Durum	8 097	7 704	8 389	9 141	8 851	9.0	13.9	-3.2	6.7
Rye	10 454	9 073	7 797	7 467	8 452	-4.2	-12.4	13.2	-0.9
Barley	61 101	60 695	61 886	60 164	63 280	-2.8	1.6	5.2	4.3
Oats	8 384	7 759	7 594	8 117	8 095	6.9	3.3	-0.3	2.0
Maize	67 037	77 915	59 246	60 695	66 891	2.4	-7.9	10.2	7.0
Triticale	11 559	13 222	12 774	11 785	11 345	-7.7	2.2	-3.7	-5.8
Sorghum	728	929	720	680	750	-5.5	-4.0	10.3	5.8
Others	4 053	3 995	3 456	3 664	3 932	6.0	-12.1	7.3	0.7
Cereals	**307 619**	**330 968**	**314 375**	**297 113**	**315 711**	**-5.5**	**-2.5**	**6.3**	**3.0**
Rapeseed	20 979	24 267	21 811	20 010	22 128	-8.3	-3.3	10.6	5.7
Sunflower	9 272	9 268	7 882	8 502	9 077	7.9	-0.8	6.8	6.2
Soybeans	1 216	1 834	2 371	2 491	2 467	5.1	54.8	-1.0	36.5
Linseed	134	115	128	123	129	-3.6	-3.3	4.9	0.6
Oilseeds	**31 601**	**35 483**	**32 191**	**31 126**	**33 800**	**-3.3**	**0.4**	**8.6**	**6.8**
Field peas	1 277	1 389	2 073	2 146	2 366	3.5	49.1	10.3	49.8
Broad beans	1 019	1 233	1 956	1 925	2 033	-1.6	47.3	5.6	46.0
Lupines	153	209	383	379	416	-1.1	70.5	9.9	68.6
Protein crops	**2 448**	**2 831**	**4 412**	**4 450**	**4 815**	**0.9**	**49.6**	**8.2**	**49.0**
Sugar beet	108 979	131 009	101 769	107 587	na	5.7	-7.5		

Table 1: EU cereal, oilseed and protein crop gross production (1000t)

	EU-28					% variation
	2013/14	2014/15	2015/2016	2016/2017e	2017/2018f	vs. 16/17
Beginning stocks	31.4	38.1	48.6	45.5	38.0	-16.6
Gross production	*307.6*	*331.0*	*314.4*	*297.1*	*315.7*	*6.3*
Usable production	304.8	328.0	311.6	294.5	313.0	6.3
Imports	19.2	15.6	20.6	18.5	18.3	-1.3
Availabilities	**355.4**	**381.7**	**380.8**	**358.6**	**369.2**	**3.0**
Total domestic uses	271.6	279.2	282.3	283.2	284.4	0.4
- Human	64.8	65.0	65.1	65.4	65.7	0.4
- Seed	9.5	9.6	9.6	9.6	9.5	-0.8
- Industrial	32.4	32.6	33.1	33.4	34.2	2.4
o.w. bioethanol	*11.3*	*11.5*	*12.0*	*12.2*	*12.9*	*5.7*
- Animal feed	164.9	172.0	174.4	174.8	175.0	0.1
Losses (excl on-farm)	2.2	2.2	2.2	2.2	2.2	0.0
Exports	43.5	51.7	50.8	35.2	42.8	21.8
Total uses	**317.3**	**333.1**	**335.3**	**320.6**	**329.4**	**2.8**
End stocks	38.1	48.6	45.5	38.0	39.8	4.8
- Market	38.1	48.6	45.5	38.0	39.8	4.8
- Intervention	0.0	0.0	0.0	0.0	0.0	
Self-sufficiency rate %	**112**	**117**	**110**	**104**	**110**	

Table 2: EU overall cereal balance sheet (million t)

WORLD ESTIMATES

million tons	14/15	15/16	16/17 est.	17/18 f'cast 23.11	17/18 f'cast 18.01
TOTAL GRAINS [a]					
Production	2056	2016	2140	2079	2100
Trade	322	346	353	359	360
Consumption	2010	1986	2083	2107	2104
Carryover stocks	535	565	622	496	617
year/year change	*45*	*30*	*57*		*-5*
Major exporters [b]	151	152	181	177	184
WHEAT					
Production	730	737	755	749	757
Trade	153	166	176	174	174
Consumption	714	721	738	742	744
Carryover stocks	207	224	241	249	254
year/year change	*16*	*17*	*17*		*14*
Major exporters [b]	66	66	76	71	76
MAIZE (CORN)					
Production	1027	984	1088	1040	1054
Trade	125	136	138	149	147
Consumption	998	974	1047	1069	1068
Carryover stocks	284	295	335	206	322
year/year change	*30*	*11*	*40*		*-13*
Major exporters [c]	58	59	79	86	86
SOYABEANS					
Production	320	316	350	348	349
Trade	127	134	148	153	153
Consumption	313	320	339	352	352
Carryover stocks	36	32	43	41	40
year/year change	*8*	*-4*	*11*		*-3*
Major exporters [d]	14	16	19	17	17
million tons (milled basis)					
RICE					
Production	480	474	487	482	484
Trade	41	39	44	43	44
Consumption	476	473	486	484	485
Carryover stocks	122	123	124	121	123
year/year change	*5*	*1*	*1*		*-1*
Major exporters [e]	37	32	29	25	24

Figures may not add due to rounding. All calculations are based on unrounded figures.
a) Wheat and coarse grains
b) Argentina, Australia, Canada, EU, Kazakhstan, Russia, Ukraine, USA
c) Argentina, Brazil, Ukraine, USA
d) Argentina, Brazil, USA
e) India, Pakistan, Thailand, USA, Vietnam

Total grains: Supply and demand summary

mt

	14/15	15/16	16/17 (est.)	17/18 (f'cast)	*y/y change*
Opening stocks	489	535	565	622	*+ 10.0%*
Production	**2,056**	**2,016**	**2,140**	**2,100**	*- 1.9%*
Total supply	2,545	2,551	2,705	2,722	*+ 0.6%*
Total use	**2,010**	**1,986**	**2,083**	**2,104**	*+ 1.0%*
of which: Food	*669*	*670*	*690*	*698*	*+ 1.1%*
Feed	*888*	*870*	*921*	*931*	*+ 1.1%*
Industrial	*325*	*329*	*344*	*356*	*+ 3.5%*
Closing stocks	**535**	**565**	**622**	**617**	*- 0.7%*
major exporters [a]	*151*	*152*	*181*	*184*	*+ 1.2%*
Trade (Jul/Jun)	**322**	**346**	**353**	**360**	*+ 2.1%*

a) Argentina, Australia, Canada, EU, Kazakhstan, Russia, Ukraine, USA

The cereal world production in 2016-2017 has been especially high, with 2 134 million tonnes, as well as their trades (july-june), reaching 352 million tonnes, due to increasing expeditions to Asia and Africa. In 2018, an increase of the demand is expected, and therefore a decrease of the stocks.

For wheat, the world procution has been very good, due to better yields. The biggest exportator is the United States, followed by Russia. Prices are rather low except for high-quality products.
For maize, the world production has also been very good. The major European producing countries are Romania, France, Spain, Italy, Hungary and Poland. The consumption is leaded by animal feeding, since meat production increases. Food use is increasing as well, due to demographic increasing in Africa and South Asia. The industrial demand is leaded by China and the United States, the first world transformers. Importation needs decreased in Europe and Asia, but increased in South America, Middle-East and Africa.Japan and Mexico are the biggest buyers.

Europe provides roughtly 55% of the rye, 40% of the barley, 33% of the oat and 20% of the wheat in the world.

2. BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

A body of common rules to determine cereal characteristics, accepted by every stakeholder of the sector, will contribute to delete "technical trade barriers" and make the trade exchanges easier within the European Community.

The development of these documents within CEN structure recognized by all partners as neutral and impartial, will ensure their acceptance by every partner within the cereal chain.

The involvement of all European countries will provide documents that really match the European needs and specificities. This is of upmost importance for standards quoted in the European Regulation. Furthermore, when documents used in Regulations are developed outside European structures, they cannot take in account all European specificities as they must be applicable in non-European countries.

From a more technical point of view, with economic consequences, a better description of analytical methods given in Standards and their validation through ring-tests will improve the reproductibility of the results. This will contribute to prevent disputes between buyer and seller laboratories.

In addition, the choice of analysis methods is not always "neutral" from an economical point of vew: promoting such criteria or such method for analyzing a given criteria could sometimes lead to favour a product against another, or a classification grid regarding another.

Analytical methods properly specified in Standards may become tools for European actors to promote their products and improve their world market share.

3. PARTICIPATION IN THE CEN/TC

All the 34 CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible

under certain conditions. To participate in the activities of this CEN/TC, please contact the national standards organization in your country.

4. OBJECTIVES OF THE CEN/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

4.1. Defined objectives of the CEN/TC

- Harmonize national Standards in European countries in order to facilitate intra-Community trade by minimizing non-tariff barriers.

- Create greater involvement of all the CEN member countries in standardization work due to the obligation to transfer any European Standard into national Standard collections. Within this frame, an increased participation in interlaboratory validation exercises relating to European methods is also expected.

- To assiste in developing common European positions in the international arena such as ISO or Codex, so as to enable international standards to take more account of European requirements.

- Close co-operation between standardization and regulation within Europe is to be found for mutual benefits. This will be reinforced through formal links between European Commission legal experts and CEN/TC 338 specialists.

Based on these objectives, the CEN/TC 338 scope is prosposed as following:
"*Standardization of test and characterization methods for cereals and cereal products, including physical, chemical, biochemical and physico-chemical methods and pending sampling methods*."

4.2. Identified strategies to achieve the CEN/TC's defined objectives.

By drawing from existing collections of ISO, ICC, AACC, AOAC (*etc*.) standards, and from the individual national standards, CEN Technical Committee 338 had been able to publish European standards relating to the sampling and analysis methods for cereals.

Appropriate existing standards such as ISO ones or reference documents had, within this context, formed the basis of a rapid adoption procedure.

These consultations also enabled to finely identify the modifications to be made in the proposed documents in order to take better account of the specific needs of the European participants.

The current work program is based on surveys done by the CEN/TC 338 members. They have listed potentially interesting documents and made proposal to the Technical Committee.

Some ISO standards are developed on the basis of a parallel adoption procedure within the framework of the Vienna Agreement.

Finally, for items deemed important to Europeans but not dealt with elsewhere, Working Groups have been set up to draft the required standards. A high priority is given by CEN/TC 338 to methods used in the definition of quality for cereal intervention procedures.

4.3. Environmental aspects

CEN/TC 338 is concerned by environmental aspects and especially by treatment of the waste issued of reagents used for methods of analysis. Environmental aspects are considered for each NWIP and comments of CEN/TC 338 members on environmental aspects are taked into account during the development of the project.
CEN-CENELEC Guide 33 published in April 2016 provides guidance on how to address environmental issues in testing standards.

5. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME

The main factor which could lead to delay in the work program are the difficulties to organise interlaboratory tests because of lack of available resources, *e.g.* cereal experts and funding needed for their organisation in order to meet the ISO 5725 requirements. CEN/TC 338 members decided that all the standards of methods of analysis have to include precision data in order to facilitate their use by laboratories. For emergent need of research in support of standardisation, a solution could be to answer Dedicated Calls from the EC with mandate dedicated to organisation of interlaboratory tests so as to publish validated methods of analysis.

Such availability issues could be solved by explaining the benefits of participants in European standardisation and the potential dangers or disadvantages of non-participation. The requirement to produce CEN standards in three languages creates additional resource issues in terms of technical translation. The support of National Standard Bodies and cereal research institutes will be a keystone in achieving this.

A lack of co-operation with other CEN Technical Committees dealing partly with cereals could lead to duplication of work and waste of ressources as well as, potentially, to the creation of different documents on the same work area. For instance, CEN/TC 327 develops methods for animal feeding stuffs which may include cereals, and CEN/TC 275 drafts methods on contaminants (mycotoxins, pesticides, *etc*.), which may be generic and hence less specific to cereal or cereal products matrices.
"Administrative" liaison with regular review of documents received and common experts within two –or more- Technical Committees will avoid problems of conflicting standards. The project manager for food at CEN/CS will provide efficient co-ordination.

In the same way, a lack of reciprocal information with ISO/TC 34/SC 4 and other international associations such as ICC, FEDIMA or COCERAL will lead to a waste of ressources: this will be avoided by similar exchanges of information and experts.

Discrepancies between standardised methods and those used for Regulatory purposes must be avoided. CEN/TC 338 chooses to give high priority to criteria used in European Regulations. Modification of such Regulation will probably occur in the future. It is thus important to establish close contacts with the Legislative Authority, in order to follow these modifications without delay.

European Commission is in relation with CEN/TC 338 activities. A close cooperation needs to be maintained.