

Manual of Good Practices for Food Banks: the perspective of a new construction

Manual de Boas Práticas para Bancos de Alimentos: a perspectiva de uma nova construção

Natália Ferreira de Paula¹
Luana de Assis²
Cilene da Silva Gomes Ribeiro³
Islandia Bezerra¹

¹ Universidade Federal do Paraná, Departamento de Nutrição, Programa de Pós-graduação em Alimentação e Nutrição. Curitiba-PR, Brasil.

² Pontifícia Universidade Católica do Paraná, Programa de Pós-graduação em Bioética. Curitiba-PR, Brasil.

³ Pontifícia Universidade Católica do Paraná, Curso de Nutrição. Curitiba-PR, Brasil.

Correspondence

Natália Ferreira de Paula
E-mail: nataliafes13@gmail.com

Abstract

Food Banks (FB) are the most important Food and Nutrition Security (FNS) Tools to fight against food waste all over the country. There are currently 214 FB operating in Brazil. The food received by the Banks usually have no commercial value, however, it is adequate for consumption. The Good Practices, on the other hand, become essential elements to guarantee the quality of the received and donated food by the FB. The Manual of Good Practices (MGP) guides the implementation of Good Practices and helps their maintenance. Considering the importance of the MGP for the promotion of the FNS of the recipients, as well as the lack of specific literature for the sector, this article presents a Script proposition of the MGP with an expanded view for application in FB. The systematization of the proposal follows an adaptation of the MGP used for food services and regulatory frameworks referring to Good Practices in national and international scopes. The Script was composed of ten items, which are detailed, related to the regulatory frameworks, and they approach, besides the quality control usually observed for the food services, items peculiar to the FB. Finally, it is important to highlight that the MGP should be developed according to each reality. It is also worth noting that the script alone does not promote the FNS of the recipients, since there is a need to systematically implement what is described and/or to make adaptations to ensure the quality control of food.

Keywords: Segurança Alimentar e Nutricional. Controle de Qualidade. Qualidade dos Alimentos. Manuais.

Resumo

Os Bancos de Alimentos (BA) são os Equipamentos de Segurança Alimentar e Nutricional (SAN) mais importantes para o combate ao desperdício de alimentos em todo o país. Atualmente, existem 214 BA em operacionalização no Brasil. Os alimentos recebidos pelos Bancos frequentemente não possuem valor comercial, no entanto, encontram-se próprios para o consumo. As Boas Práticas, por sua vez, tornam-se elementos essenciais para garantir a qualidade dos produtos recebidos e doados pelos BA. O *Manual de Boas Práticas* (MBP) norteia a implantação das Boas Práticas e auxilia na sua manutenção. Considerando a importância do MBP para a promoção da SAN dos beneficiários receptores, assim como a inexistência de literatura específica para o setor, o presente artigo objetivou apresentar uma proposta de Roteiro de MBP com olhar ampliado para aplicação nos BA. A sistematização da proposta segue uma adaptação de MBP utilizado para serviços de alimentação e marcos normativos referentes às Boas Práticas em âmbito nacional e internacional. O Roteiro foi composto por dez itens, que são detalhados, relacionados com os marcos normativos, e abordam, além dos controles de qualidade normalmente observados para os serviços de alimentação, artigos peculiares aos BA. Por fim, é importante destacar que o MBP deve ser desenvolvido de acordo com cada realidade. Ressalta-se ainda que o roteiro por si só não promove a SAN dos beneficiários receptores, pois existe a necessidade de executar sistematicamente o que está descrito e/ou realizar adaptações para garantir o controle de qualidade dos alimentos.

Palavras-chave: Segurança Alimentar e Nutricional. Controle de Qualidade. Qualidade dos Alimentos. Manuais.

Introduction

Food and Nutrition Security (FNS) is understood as the fulfillment of everyone's right to regularly and permanently access quality food in sufficient quantity, without compromising the access to other essential needs, based on health-promoting food practices that respect cultural diversity and that are environmentally, culturally, economically and socially sustainable.¹

Among the many criteria that are recommended for achieving FNS, one of the most discussed in nutrition science is the quality of food. There are several definitions for a quality food, some more restricted and others more comprehensive, and here we will use as a parameter the

definition of expanded quality of food, in which the factors considered for quality encompass the following aspects: regulatory, sanitary, ecological, organoleptic, nutritional, social, cultural, ease of use and appearance.²

Once the concepts are considered, it is important to clarify that food quality or FNS are composed of innumerable aspects and that, when exploiting one of them, in the case of this study, the criterion of “*quality food*”, with regard to FNS, and the “*sanitary aspect*”, inherent to the expanded quality, we will not be reaching in full the quality of the food or the FNS of the consumers, however, going toward its effectiveness.

Thus, we start by reviewing the sanitary and/or hygienic aspect of food quality, which aims to assure the consumer that the food ingested is adequate and safe.² In order to be able to attribute this aspect of quality, it is necessary to apply general principles that guarantee the hygiene of food, as well as constant improvement of these actions.³

Safe Food in Food Banks in favor of FNS

Although there is a narrow definition of food quality, as opposed to expanded quality, the *Codex Alimentarius*⁴ is certainly an important reference for the safe food field. According to this regulation, the application of general principles and of Good Manufacturing Practices (GMP) allows favorable environmental conditions for the production of safe food.

However, it is worth noting that the implementation of GMP is regulated by national and international legislation, which establishes minimum needs to be taken by the food services.

In Brazil, the GMP regulations are established by the Ministério da Saúde (MS - Ministry of Health) - Vigilância Sanitária (Health Surveillance) and by the Ministério da Agricultura, Pecuária e Abastecimento (MAPA - Ministry of Agriculture, Livestock and Food Supply), and usually, because of their purpose, they operate very closely to a market logic that excludes other strategies of production and commercialization and prioritizes, fundamentally, profit. In addition, they focus on what the major industries and other segments of the trade in goods and services in the sector determine, and are, thus, pressured to set certain standards, since these are their demands.⁵ Hence, federal sanitary legislation maintains homogenized quality standards based on large-scale production, which require high investments for their application.^{5,6}

Some food sectors do not have specific Good Practices legislation, as is the case of Food Banks (FB). Thus, the *Manual of Good Practices* (MGP) is a document that describes and gathers the GMP instituted for a particular establishment. For this reason, it may, if properly implemented, contribute to the sanitary control of food.^{7,8}

In the literature, there are several scripts to prepare the MGP, focused on Food and Nutrition Services and for food industries. In this context, it is possible to mention the *Script for the development of the MGP for Food Industries and for Food Services*, from the Vigilância e Fiscalização Sanitária (Health Surveillance and Inspection) of the Municipality of Rio de Janeiro,⁹ the *Guide of Development of the MGP for Food Handling*, from the Conselho Regional de Nutricionistas (Regional Council of Nutritionists) 4th Region (CRN-4),¹⁰ the *Basic Model of MGP for Professional Orientation*, from the Conselho Regional de Nutricionistas (Regional Council of Nutritionists) 3rd Region (CRN-3),¹¹ among others.

Nevertheless, the specific bibliography for the development of the MGP for FB is still restricted, especially considering the expansion of the view regarding “quality food” and the flexibility of sanitary standards for this decentralized FNS tool. It is also important to highlight that FB are distinguished in numerous factors from food industries, from trade in goods and services and from large-scale production, sectors that “inspire” the development of sanitary legislation, as previously noted.⁵

Food Banks and their social function

Food Banks are used in several countries around the world to help combat food and nutritional (in)security of the population.^{12,13} Implanted in Brazil a little more than a decade ago, besides acting to promote FNS in the country, FB consist of the most important instruments for combating food waste.¹⁴ Currently, 214 FB are established in Brazil, of which 109 are public Banks, which are financed by the Ministério do Desenvolvimento Social e Combate à Fome (MDS - Ministry of Social Development and Fight against Hunger), and 105 by the private sector.¹⁴

In Brazil, FB are classified as Decentralized Food and Nutrition Security Tools (EDSAN) and among their activities are: to collect, select, process, store and distribute food kinds collected through donations from the retail chain and/or acquired from family agriculture through government programs such as the Food Acquisition Program (PAA) and the National School Feeding Program (PNAE).¹⁵ Food received by the FB is distributed free of charge to entities of the social welfare network, which provide food to recipients, people in a situation of food and nutritional insecurity, and contribute to the supply of Popular Restaurants, Community Kitchens and Schools.¹⁴

Food donations come from different places. These foods are often considered of no commercial value, however, they still retain their nutritional characteristics and do not pose a risk to human consumption, provided they are properly handled.¹⁶ In this sense, the application of GMP in FB is essential to ensure the quality of foods donated to recipient entities, mainly due to the degree of maturity of the received donations, which usually reach FB with their expiration dates close to the end, and are therefore more susceptible to contamination or quality loss.

One of the relevant factors for the implementation and maintenance of GMP is the presence of a qualified Technical Manager (TM).¹⁷ Thus, it is highlighted that the presence of a nutritionist or other professional of the food sector duly qualified to coordinate the actions of GMP in FB, although it is not currently a requirement, however, it is a recommendation of the MDS, is, above all, a potentiality for service.¹⁴

Considering the relevance of FB for the materialization of FNS in the country, the number of these tools currently being operationalized, the need for sanitary control of food, and the lack of guidelines for the development of MGP in the literature for this specific segment, the present study aims to present a proposal for a script, exclusively for the sector, with the purpose of guiding the development of the MGP.

It should be emphasized that this article was based on the current GMP legislation, however, it is important to clarify that the intention is not to reinforce the biological view, inherent to the training of health professionals, specifically the nutritionist, however, it intends to ensure a reflection on such requirements, thus taking into account the “expanded quality” perspective, as well as the specificities inherent to the FB sector.¹⁸ The expectation of this article is to contribute to FNS of the institutionalized individuals - in the entities that receive such foods from FB - and, above all, in order that the Technical Manager (TM) of this tool may assume a more problematizing and reflexive posture, relativizing the demands that are impracticable to execute in certain moments, incorporating alternatives, based on the technical knowledge that best adapt to the situation, always prioritizing FNS from the perspective of the Human Right to Adequate Food.

Methodology

The theoretical-practical paths taken

The methodology of the study was divided into three stages. The first one was the identification and analysis^a of processes commonly carried out by technical managers of FB. Therefore, we carried out the analysis of the Check List of the FB of the Mesa Brasil Sesc Paraná^b Program - version 2013,¹⁹ which is used by the State Coordination Team of the Program to monitor Good Practices and other operational procedures in the eight state units. From this analysis, the pertinent items were defined in order to propose a guide for the development of the MGP for this segment.

a For access and analysis of the material, a formal request was made to Sesc PR, which granted authorization for the development of the study.

b Mesa Brasil is a Program of the Serviço Social do Comércio (SESC - Social Service of Commerce) for Sustainable Food and Nutrition Security, which redistributes food for consumption to previously registered social institutions and families, implemented nationwide since 2003.

The second one was the development of a table containing the items that formed the proposal of the script for the development of the MGP and the relation of these items with national and international laws, aiming at the systematization of information. For purposes of regulatory frameworks, materials that have validity and application in the federal scope were considered: Ministério da Saúde (MS - Ministry of Health) Ordinance No. 1,428, of November 26, 1993,²⁰ the Resolution of the Collegiate Board of the Agência Nacional de Vigilância Sanitária (ANVISA - Brazilian Health Regulatory Agency) No. 275, of October 21, 2002,²¹ the RDC of ANVISA No. 216, of September 15, 2004.²²

MS Ordinance No. 1,428, of November 26, 1993, approves, in the form of the annexed texts, the “Technical Regulation for Sanitary Inspection of Foods”, the “Guidelines for the Establishment of Good Manufacturing Practices and Provision of Services in the Food Area” and the “Technical Regulation for the Establishment of Quality and Identity Standard (PIQs) for Products and Services in the Food Area”. This ordinance determines that food-related establishments should adopt, under their own technical responsibility, their own Good Manufacturing Practices and/or Provision of Services, their Quality Programs, and comply with the PIQs for Products and Services of the Food Area.²⁰

ANVISA's RDC No. 275, dated October 21, 2002, provides for the “Technical Regulation on Standard Operating Procedures for Food Producer Establishments” and the “Checklist of Good Manufacturing Practices in Food Producer Establishments”.²¹ ANVISA's RDC No. 216, dated September 15, 2004, provides for “Technical Regulation of Good Practices for Food Services”.²²

The *Codex Alimentarius* was also used in the methodology of the study, although its limitations are recognized for such application. The *Codex* is an internationally adopted food standard, coordinated by the Organização das Nações Unidas para a Alimentação e a Agricultura (FAO - Food and Agriculture Organization of the United Nations) in conjunction with the Organização Mundial da Saúde (WHO - World Health Organization), which is taken as a parameter by the Organização Mundial do Comércio (WTO - World Trade Organization) to arbitrate occurrences in the world trade, where food goes through long marketing circuits,²³ a situation differentiated from the reality of FB, object of this study.

Faced with this limitation, it is justified to use the *Codex* from a critical view, in which, for that purpose, some relevant points of the regulations were extracted, which in the view of the authors adapt to the reality of FB.²⁴

The third methodological stage was the construction of the Script proposal, which includes a detailed description of each previously selected item, as shown in Table 1.

For the preparation of this last stage, the suitability was carried out according to the model of the Script for the development of the MGP for Food Industries and for Food Services, from

the Vigilância e Fiscalização Sanitária (Health Surveillance and Inspection) of the Municipality of Rio de Janeiro.⁹

Results

From the analysis of the Check List of the Mesa Brasil Program of Sesc PR, ten items were included that contemplate the MGP proposal for FB. Aiming to better dispose the information in the Manual, some of these items were subdivided and related to the legislation covered in this study, as presented in Table 1.

Table 1. Items selected for the proposed Script to the Manual of Good Practices for Food Banks (FB): an expanded view and its relation to legislation. Curitiba-PR, 2016.

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
1. IDENTIFICATION OF THE FOOD BANK (FB)	Not subdivided topic	Ordinance 1,428, PIQs for services in the food area, item VI, letters a (Designation), b (Classification), c (Description) and d (Characterization) RDC 275, annex II, letter a, items 1 (corporate name), 2 (trade name), 3 (permit and sanitary license), 4 (State/ Municipal Registration), 5 (CNPJ), 6 (telephone), 8 (e-mail), 9, 10, 11, 12, 13, 14 (address), 15 (Postal Code), 21, 22 (T.M.), 23 (L.R.), 16 (branch of activity) and 20 (product category)

continua

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
2. CONSUMER ASSISTANCE PROGRAM	Not subdivided topic	Ordinance 1,428, PIQs for services in the food area, item VII, relationship with the consumer/user
3. INVENTORY	3.1. Physical Space	RDC 275, Annex II, letter B, items 1.1, 1.2, 1.3 (buildings and facilities), 1.4 (floor), 1.5 (ceiling), 1.7 (doors), 1.8 (windows and other openings), 1.10 (sanitary facilities and locker rooms), 1.13.1, 1.13.2 (lighting), 1.13.3 (electrical installations), 1.14.1, 1.14.2 (ventilation), 1.14.3, 1.14.4 (cleaning of the air conditioning system), 1.20 (layout), 4.5.2 (vehicle with covering for cargo protection) RCD 216, ANNEX, items 4.1.1 (building and facilities), 4.1.2 (layout), 4.1.3 (ceiling, walls and floor), 4.1.4 (doors and windows), 4.1.5 (sewerage system and water supply), 4.1.9 (ventilation and electrical installations), 4.1.10 (air conditioning filters), 4.1.12 and 4.1.13 (sanitary facilities and locker rooms)
	3.2. Equipment, Furniture and Utensils	Codex, Section IV, items 4.1.2 (equipment) and 4.3.2 (equipment)
	3.3. Disposable Consumables for Use in Logistics	Codex, Section V, item 5.4 (packaging)

continua

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
4. GOOD PRACTICES FOR THE TRANSPORT UNIT	4.1. Preventive Maintenance of Vehicles and their Cold Chambers	RDC 216, ANNEX, item 4.1.16 (programmed and periodic maintenance) Codex, Section VIII, item 8.3 (maintenance and preservation for food transport)
	4.2. Control of Tires	RDC 275, Annex II, letter B, item 4.5.2 (clean vehicle) RDC 216, ANNEX, item 4.2.1, 4.2.3, 4.2.5, 4.2.7 (cleaning)
	4.3. Cleaning	RDC 275, Annex II, letter B, item 4.5.3 (transportation maintains the integrity of the product)
5. GOOD PRACTICES FOR EQUIPMENT, UTENSILS AND ACCESSORIES	5.1. Cargo Handling Equipment	RDC 275, Annex II, letter B, item 3.5 (PPE)
	5.2. Safety Enabling Devices for Cargo	RDC 275, Annex II, letter B, item 4.5.3 (transportation maintains the integrity of the product)
	5.3. Accessories for Arrangement and Securing Cargo	RDC 275, Annex II, letter B, items 4.5.3 (transportation maintains the integrity of the product) and 4.5.4 (vehicle does not transport other cargoes that compromise product safety)
	5.4. Accessories for Cargo Separation	

continua

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
6. GOOD PRACTICES FOR FOOD	6.1. Pre-preparation of the Cargo and Identification for Product Traceability	RDC 275, Annex II, letter B, items 4.3.1 and 4.3.2 (identification label and wrapping on packaging)
	6.2. Loading Inspection	Codex, Section IV, item 4.4.5 (temperature control). Section VIII, item 8.2 (maintaining the temperature to protect the food).
	6.3. Palletizing and Unitization	RDC 275, Annex II, letter B, item 4.5.3 (transportation maintains the integrity of the product)
	6.4. Stowage of Cargo	RDC 275, Annex II, letter B, item 4.5.3 (transportation maintains the integrity of the product)
	6.5. Unloading Inspection	RDC 275, Annex II, letter B, item 4.1.1 (reception in protected area), 4.1.2 and 4.1.5 (inspection and selection of products), 4.1.8, 4.1.9, 4.1.10, 4.3.2, 4.3.3 and 4.3.5 (storage) RDC 216, ANNEX, items 4.7.2 (reception in protected area), 4.7.3 (inspection of products), 4.7.5 and 4.7.6 (adequate storage)
	6.6. Disapproval and Return of Cargo	RDC 275, Annex II, letter B, item 4.1.5 and 4.3.8 (disapproval and return of cargo) RDC 216, ANNEX, item 4.7.4 (disapproved products)

continua

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
7. GOOD PRACTICES FOR FOOD HANDLING	7.1. Loading and Unloading Procedure	RDC 275, Annex II, letter B, items 4.1.11 (adequate cold grid), 4.5.1 and 4.5.5 (temperature suitable for transport)
	7.2. Monitoring During Displacement	
	7.3. Food Fractionation	
8. GOOD PRACTICES FOR WATER SUPPLY	Not subdivided topic	RDC 275, Annex II, letter B, items 1.17.3, 1.17.4, 1.17.5, 1.17.6 and 1.17.7 (water reservoir) RDC 216, ANNEX, item 4.4.4 (description and cleaning of the water reservoir)
9. GOOD PRACTICES FOR TRANSPORT OPERATORS	9.1. Human Resources	RDC 275, Annex II, letter A, items 18 and 19 (number of employees and shifts)
	9.2. Use of Uniforms, Personal Protective Equipment (PPE) and Identification (Badge)	RDC 275, Annex II, letter B, items 3.1.1, 3.1.2 (suitable uniform), 3.5 (PPE)
	9.3. Rules for visitors	RDC 216, ANNEX, item 4.6.8 (visitors)

continua

ITEM FOR THE PROPOSAL	SUBITEM	RELATION TO LEGISLATION
10. FB DOCUMENTATION AND RECORD	10.1. Documentation of the Donor and of the Recipient of the Products	Codex, Section V, item 5.7 (documentation and record)
	10.2. Documentation of the Transport Unit	
	10.3. Documentation of the Transported Product	
	10.4. Documentation of the Transport Operator	
	10.5. Records and Controls	

Proposal of a Script for the MGP for FB: from regulations to applicability

After relating the items and subitems to the regulatory frameworks, considering that FB present activities peculiar to the service, which may cause difficulty in understanding, it was identified the need to detail the information to be presented in each topic of the Manual.

It is necessary to clarify beforehand that the proposal sought to show innumerable possibilities in FB, however, we emphasize the need to adapt the Script to each reality, always based on an expanded view with relative flexibility according to the physical structure, the financial possibilities, the size of the FB (small, medium, large), the type of product handled, the degree of handling, the storage time, human resources staff (employees/volunteers), the available equipment, the climate of the region, the type of distribution of donations, the risk classification of the establishment, the regional and municipal sanitary regulations, among other factors that may be relevant.

Proposal of the Script for the Development of the MGP for FB: the expanded view is composed of the following items: 1. Identification of the FB, 2. Consumer Assistance Program, 3. Inventory, 4. Good Practices for the Transport Unit, 5. Good Practices for Equipment, Utensils and Accessories, 6. Good Practices for Food, 7. Good Practices for Food Handling, 8. Good Practices for Water Supply, 9. Good Practices for Transport Operators, 10. FB Documentation and Record.

In the first topic of the Manual, entitled *Identification of the FB*, the proposal includes the description of the corporate name, trade name, CNPJ (National Registry of Legal Entities), State/Municipal Registration, e-mail, address, opening hours, telephone number, technical manager, if applicable, identification and proof of the qualification of the technical manager, if applicable, legally responsible, sanitary inspection certificate and business license.^{20, 22}

We also propose that in the *Identification*, the characterization of the establishment is elaborated, i.e., if it is public or private, if it works in the modality FB, Urban Harvest or mixed;^c which types of collected products, e.g., vegetables and fruits, industrialized, frozen, refrigerated, hygiene and cleaning products, utensils, clothing, or other donations in general; the types of donors, e.g., food industries, wholesalers, markets, bakeries, grocery stores, fruit shops, farmers, agricultural cooperatives; the types of institutions and/or beneficiary entities, e.g., philanthropic daycare centers, parent-teacher associations, long-term institutions for the elderly, families in situations of social vulnerability, indigenous communities, quilombola communities, land reform settlers, among others. The recommendation to make this description is due to the need to know the audience that is expected to be attended. This information qualifies FB and their premise, which is to attend to people in situations of social and food vulnerability.

Regarding the second item of the Manual's proposal, called *Consumer Assistance Program*, it is suggested that the form of assistance and/or communication is described, both in the case of donor organizations and/or institutions, as the recipient entities, e.g., whether the Bank's address, e-mail, and telephone number are made available, whether visits are made for meeting/recognition and/or follow-up (between donor and recipient institutions), among other necessary information.²⁰ When describing this mechanism of communication and/or contact, the possibilities of closer ties among the agents and, especially, among the team that manages the process will be widened.

The third topic of the proposal is the *InVENTORY*. As the item demands distinct descriptions, it is recommended for it to be subdivided into three topics, which are: 3.1. Physical Space, 3.2. Equipment, Furniture and Utensils and 3.3. Disposable Consumables for Use in Logistics.

With regard to the subitem Physical Space, we suggest for all FB areas to be detailed, starting from the *surroundings*, which may contain information about surrounding areas (other entities that may be identified as partners), internal access routes, if they are paved, if they have adequate flow, sanitary conditions, if they are free of vectors and animals, of garbage accumulation or stagnant water, urban conditions, whether it is an urban, rural, mixed or community area. This description also makes it possible to recognize some limiting factors in the logistics scope and, thus, to guarantee alternatives that may be used and/or locally activated.

c In the Urban Harvest modality, food is collected with donors and delivered directly to the beneficiary entities, without formation of stock. In the FB modality, the donations are collected with the donor and/or received by the donor and the entities carry out the removal of the products in the FB.²⁵

It is also recommended that spaces such as *Garage, space for cleaning utensils, space for cleaning vehicles, stock of disposable materials*, of hygiene and cleaning materials, file of documents, office, among other spaces that may exist in the FB, are also described and specified in the subitem Physical Space.^{21,22} It is possible, from these additional descriptions, that FB reinforce other stages in the incoming flow and outflow, or, still, make other projects feasible that may value the existence of the FB in that community.

It is suggested that information on *Locker rooms and toilets* should be described in topic 3.1, emphasizing how the separation between the food storage area and the locker rooms and toilets is done, if they are identified and used exclusively for food handlers, if they are separated by gender, if the external doors are equipped with automatic closing, such as springs or others, if they have hand basins with all the conveniences,^d if there are collectors and if they are activated without manual contact, if they have a shower, individual cabinets, among others.^{21,22}

In this subitem it is also proposed to describe *Warehouses for the storage of dry, non-perishable or semi-perishable products and cold chambers*.^{21,22}

The description of each physical space mentioned above should contain information about the *layout*, such as the dimensions of spaces and locations, if there are protective measures against cross-contamination; information on the *ceiling, ceiling lining and covering* of spaces, in relation to the material they are made of, if they are waterproof and light-colored.^{21,22} The descriptions requested in this item are intended to guarantee FB their capacity to safely handle food. It is also suggested to detail information on the *Walls* of the areas, describing the material with which they are constructed, as well as types and colors of paintings and coatings.²² In relation to the *Floors* of the areas, the material of which they are constituted, which types, if they are nonslip, waterproof, and if they have adequate drainage should be detailed.²² Then, the *Openings* of spaces should be specified, such as docks, doors, gates and windows, in which the type of window, door, dock and gates should be described, as well as the material with which they are built, type of glass, wood, aluminum, stainless steel, iron, among others, types and colors of paintings, if they have railings or removable screens, if they are fitted to the frames and if the external doors are equipped with automatic closing.^{21,22} Taking into account that food handling requires certain skills, in this case, by following the current regulations, a number of requirements are needed for its description. However, by knowing the reality of the tool (FB), it gives the management team a better technical appropriation to demand better operating conditions and/or to formulate action plans for short, medium and long term implementation, according to the characteristics of each place.

d Hand washing conveniences are understood as: running water, antiseptic odorless soap, or odorless soap and antiseptic product, non-recycled paper towel, hand hygiene procedure posted in a visible location, waste collector with non-manual activation.

Other descriptive information also makes it possible to know and recognize limits and potentialities of the tool, such as information about the *Lighting* of the areas, whether it is natural or artificial, how it is constituted, including the number of lamps, number of light bulbs, type of light bulbs, if they have protection against falling and explosion, in case they are not LED light bulbs, if they have shading, shadows or dark corners.^{21,22} The description should also inform if the *Ventilation* of the spaces is natural or mechanical and what type, if the air flow does not directly affect the food;^{21,22} add data about the *Electrical grid*, who is the power supplier, the type of wiring, whether it is built-in or protected in piping, whether it allows the cleaning of environments, what is the location of the power panel(s), if it is (they are) identified.^{21,22}

Regarding Food and Nutrition Security (FNS), other dimensions need to be incorporated, not only by considering the perspective of safe food, but by understanding that the social and political contexts (and access to public policies that make it possible to reach goods and services) are intrinsically related and therefore fundamental. Thus, it is important to make explicit how the *Sewage network* is constituted, which is the type of network, if it is interconnected to the public network, if there is a septic tank, if there is a grease trap, if the drains are siphoned;²² or, regarding *water supply*, to explain the type of network, if it has a water tank, if it has a well, if it is tap water, if it has a faucet with hot water, among others.²²

Concerning *Filter equipment for air conditioning*, if applicable, it should be explained how filters are cleaned and maintained, how often and how the record is made, if the record is displayed in a visible location.^{21,22} Here, it is predominant the understanding of FNS from the perspective of safe food, therefore, a basic principle of FB.

It is proposed that fleet data should also be reported when applicable, listing the number of vehicles, type of vehicles and what is optional,^e also add the brand, model, license plate, year of manufacture, No. of the sanitary certificate of the vehicle(s), maximum load capacity, coachwork volume, internal measures of the trunk and total height of the vehicle(s). It should also be detailed if there is a separation between the cabin and the cargo area, as well as easiness for hand hygiene in vehicles, such as neutral liquid soap, paper towel and alcohol gel 70% and, when possible, water tank.

If the vehicle(s) has(have) a cargo area, it should also be described the type, whether it is an open or closed coachwork, dry or refrigerated, whether it has insulation, lighting, doors, curtains on doors for temperature maintenance, foundation, thermometer, valve for sealing the drains, among others. If the cargo area is refrigerated/frozen, it should be detailed the data regarding the engine, such as the model, supplier, date of installation, maximum and minimum temperature, types of activation, whether it uses motor or electric power, type of outlet and voltage to connect electric power. If the

e E.g., power steering, power window, reflective strip, reverse warning sound, reverse light, air conditioning, hot air, window gutters, among others.

trunk has thermal insulation, it should be listed the type of material it is made of. It should also be stated whether the vehicle has identification at the doors on the transport of perishable foods.²¹

The second subitem of the *Inventory* section refers to Equipment, Furniture and Utensils. In this stage one should list data on the description, quantity and storage location of the equipment, furniture and utensils that FB have.²⁴

To finalize the topic *Inventory*, the Disposable Consumables for Use in Logistics are specified, and in this sense it is suggested to list all the materials commonly used for this activity, including their descriptions, average monthly consumption and their storage locations in the warehouse and in vehicles.²⁴ Examples of disposable consumables for use in logistics are plastic bags for collection, plastic bags for fractionation, plastic bag seals, disposable gloves for collection, among others. Considering the understanding of FNS, which predicts aspects related to sustainability, in describing this item, the tool (FB) may innovate by bringing elements that contemplate the substitution of disposable items for items with more durable characteristics (returnable fabric bags, reusable seals, reusable PVC gloves, storage containers in hygienic conditions, among others).

Topic four of the proposal for the preparation of the MGP for FB refers to *Good Practices for the Transport Unit*, and the proposal is also subdivided into three subitems, including: 4.1. Preventive Maintenance of Vehicles and their Cold Chambers, 4.2. Control of Tires and 4.3. Cleaning. Regarding the Preventive Maintenance of Vehicles and their Cold Chambers, as well as Control of Tires, the manufacturers' indication must be verified about the items to be permanently monitored for preventive maintenance of vehicles, their cold chambers (insulation and refrigeration equipment) and of the tires, to describe them in the Manual. It is also proposed to list the form of control of these items, and regarding the tires, it is further proposed to add the models and the service life of the tires that are currently installed in the vehicle(s).^{22,24} In the subitem Cleaning, it is suggested the description of the frequency, the procedure, the person responsible and the form of registration of vehicle cleaning.^{21,22}

The next topic of the Manual's proposal refers to *Good Practices for Equipment, Utensils and Accessories*, and it is proposed that it should be separated into four subitems, which are: 5.1. Cargo Handling Equipment, 5.2. Safety Enabling Devices for Cargo, 5.3. Accessories for Arrangement and Securing Cargo and 5.4. Accessories for Cargo Separation. With regard to Cargo Handling Equipment, the suggestion is to specify the cargo handling equipment used by the Bank and its quantities, such as cargo trolleys, pallet trucks, forklifts, among others.²¹

The subitem dealing with Safety Enabling Devices for Cargo contemplates the description of personal and collective protective equipment used by employees in the loading and unloading process, such as safety shoes, cargo gloves, thermal jackets and a cap, which are used when it is necessary to access refrigerated or frozen chambers, among others.²¹ The expanded quality view also considers the aspects that deal with the safety and ergonomics of workers.

Concerning the Accessories for Arrangement and Securing Cargo, it should be described those available for fixing the cargo that have the function of preventing it from moving during transportation and causing damages to the products, and also for safety reasons in the transport. Examples of devices for securing cargo are: ropes, waxed materials, pallet truck locks, among others. It could also be added the description of how the application of the devices occurs in each case and what preventive measures are taken in order that they do not contaminate the food.²¹

Regarding the Accessories for Cargo Separation, one must describe the accessories available for this activity (partitions, breakers and others). These accessories have the function of avoiding contamination of food and/or conserving it in case the same vehicle needs to carry other products, as well as food on the same trip, or in case it needs to carry refrigerated food and food at room temperature, concomitantly.²¹

The sixth topic that the MGP proposal addresses is *Good Practices for Food*, and the suggestion is to be divided into six subitems, namely: 6.1. Pre-preparation of the Cargo and Identification for Product Traceability, 6.2. Loading Inspection, 6.3. Palletizing and Unitization,^f 6.4. Stowage of Cargo, 6.5. Unloading Inspection, 6.6. Disapproval and Return of Cargo.

The purpose of the Pre-preparation of the Cargo and Identification for Product Traceability is to present where (container) and how the collected products are packaged, if they are identified with date, donor name, type of product, quantity and expiration date (time of consumption), or other information in order that its traceability is viable.²¹ This description is essential to establish a real commitment between donor and recipient. Thus, in making such records by the donor, the intentions of following a protocol that establishes bonds of solidarity are imprinted, however, with responsibility and seriousness. On the part of those who receive, symbolically, care relationships are interpreted for those who will consume these products.

The Loading Inspection provides information on the preparation of the conditions of the vehicle's chamber to store the products to be transported, such as if it is necessary to connect the cold chamber in advance and what is the ideal temperature for each type of product. It is advisable to also describe, in the case of refrigerated food, how the temperature of the food and of the chamber of the vehicle is checked.²⁴ For the subitem dealing with Palletizing and Unitization, the intention is to detail these procedures, in the case of the Banks that use them for cargo storage.²¹

In subitem 6.4. (stowage of cargo), it is recommended that the form of cargo storage is detailed, listing minimum distances from the floor and walls of the vehicles, containers in which they are packaged and organized, cargo lashing, arrangement and order of the products, being the more perishable ones closer to the engine of the chamber and the less perishable ones, more distant,

f Unitization is to gather cargoes of diverse natures in a single volume for transport purposes, through lashes, barrels, boxes, nets, pallets, containers, among others.

among others.²¹ Regarding the Unloading Inspection, the proposal is that the criteria observed by the employee responsible for the cargo check is described in the Manual when the cargo is unloaded from the vehicles to the FB warehouse. The procedure for organizing the products in the warehouse should also be exposed, in which case it should be detailed the stacking of boxes, the places to store perishable (if there is a control and recording of temperatures), semi-perishable and non-perishable products, the distance from the floor and walls, the need for foundations, pallets or other, to be under the products, the disposition of products following the expiration dates and the state of preservation, among other information important to the service.^{21,22}

It may also be registered if the unloading of the products is carried out in a protected location, i.e., if there is a covering (tile, awning, acrylic, others), in which the truck may be placed under it to unload the products without the risk of contamination, which may occur, e.g., on rainy days if it does not have covering.^{21,22} In subitem 6.6. Disapproval and Return of Cargo, it is proposed to detail the procedure for returning or discarding the food when received from the donor and classified as unfit for consumption by the FB employees; it is advised to describe if they are properly identified, should they need waiting time for returning and/or discarding.^{21,22}

Topic 7 of the proposal deals with *Good Practices for Food Handling*; therefore, it is intended to be subdivided into three fields, aiming at addressing 7.1. Loading and Unloading Procedure, 7.2. Monitoring During Displacement, 7.3. Food Fractionation. In item 7.1. Loading and Unloading Procedure, it is advisable to describe the procedure of loading and unloading the food, specifying the responsible employees, the equipment used and the care involved in the process.

Regarding the Monitoring During Displacement, the proposal is to provide detailed information about the established route and the indispensable monitoring, as is the case of monitoring the temperature of the cold chamber of the vehicle, describing the care taken to maintain the cold chain, in the case of refrigerated or frozen food, the temperature control of the vehicle's chamber by means of thermometers and spreadsheets, the prevention of the escape of cold air with PVC curtains on the doors, the length of time with doors open and the arrival of the food, being unloaded directly into cold chambers already at optimum temperature.²¹ The purpose of the subitem Food Fractionation is to present information on this procedure, since some FB occasionally receive products packed in large quantities, requiring the fractionation of food to be distributed to the institutions and beneficiary families. It is suggested to detail the place where this activity is carried out, which are the cares in handling, utensils and packaging used, form of identification of the packaging, among other pertinent information.

The eighth topic of the Manual's proposal deals with *Good Practices for Water Supply*, and in this sense, it is directed to inform the source of the FB's water supply, if it is tap water, or if it has a reservoir, and if it does, it should be described the material of which the water tank is made, what conditions it is in (free from leaks, deterioration of walls, peeling, conditions of the covering),

what is the size, where it is located, which procedure is used to perform the cleaning and the periodicity, if there is a record and if it is filed. If the cleaning is performed by the employee of the establishment, it should be described if this person is able to carry out the procedure and if there are record and file of the training. On the other hand, if the cleaning is performed by an outsourced company, it should be described if the company documents are requested (Business license, Sanitary License, name and registration number of the technical manager, performed procedure, used products, certificate of service) and if they are filed.^{21,22}

The topic of *Good Practices for Transport Operators* may be approached from three subitems, which are: 9.1. Human Resources, 9.2. Use of Uniforms, Personal Protective Equipment (PPE) and Identification (Badge), 9.3. Rules for visitors. Subitem 9.1. Human Resources aims to describe the procedure for hiring/recruiting employees, trainees and volunteers, when applicable, pre-hiring medical and periodic examinations, training, staff/volunteers, descriptions of jobs and working hours.²¹

In the subitem referring to the Use of Uniforms, Personal Protective Equipment (PPE) and Identification (Badge), it is suggested to describe the type of uniform, PPE and identification given to employees/volunteers, if there are records of deliveries and where they are filed.²¹ Regarding the Rules for Visitors, the proposal is to describe the criteria defined for visitors, especially regarding access to the areas of food handling, e.g., when food is being fractionated.²²

The last topic of the proposal is related to FB Documentation and Record, dismembered in subitems 10.1. Documentation of the Donor and of the Recipient of the Products, 10.2. Documentation of the Transport Unit, 10.3. Documentation of the Transported Product, 10.4. Documentation of the Transport Operator, 10.5. Records and Controls. In the Documentation of the Donor and of the Recipient of the Products, it is suggested that the documentation used to register donations received and donations made by the FB is described, listing the items filled in, how they are delivered, where they are filed, for how long they are filed, among other important information.²⁴ In the subitem dealing with Documentation of the Transport Unit, it should be described the important documentation to the vehicle and where it is filed, such as a vehicle's sanitary license, a vehicle's inspection certificate, license plate and insurance card, if applicable.²⁴

In relation to the Documentation of the Transported Product, it should be described the important documentation for the transportation of the products, such as donation receipts, receipts, shipment receipts, among others.²⁴ Concerning the Documentation of the Transport Operator, it should be detailed the important documentation to the transport operator, which in this case is the Brazilian Driver's License (CNH) and identification badge. It should also be listed where the CNH copy is filed in the administrative area,²⁴ and also describe the Records and Controls carried out, such as control spreadsheets of mileage, fuel, driver, maintenance, temperature controls (vehicle, warehouse, food), inspections, logbook, among others.²⁴

It is pertinent to point out that the MGP should accurately portray the reality of the FB at the time of writing the document. It is recommended that the MGP contain header and footer. The header may be formatted with the company logo (if any), the Title: “Manual of Good Practices - Food Bank (name of Bank)”, the revision number, the date of the last revision and pagination. The footer may contain the names of those responsible for developing and approving the Manual. It is also important to write in the document how the MGB is made available to employees.²⁴ This notice assures the staff that their duty to socialize information will be fulfilled in the best possible way.

Finally, it is important to reinforce that the proposal of the Manual is based on several situations - of different realities - that may occur among FB, then, occasionally, items selected in this study may not be applicable in their entirety to some FB. On the other hand, applicable situations may arise that were not described in the proposal. This is mainly due to these tools being dynamic, but also due to the incipience of studies in the literature dealing with this sector. From the different perspectives, it is worth mentioning the relevance to FB in having a guiding Manual, not only to comply with technical requirements, but to ensure safety in procedures.

We reiterate the purpose of the Script to guide and not to demand/define/oblige FB to comply with the items collected in this article.

It is considered a limitation the use of international and federal sanitary standards as a methodological resource, which makes the material comprehensive and attributes a non-regionalized characteristic, mainly in the face of Brazilian diversity. Another limiting issue is that standards are developed primarily for large-scale food production, which gives them a greater need to meet certain sanitary requirements in order to avoid generating risks for the population.

The sum of these factors may reflect in difficulties in the applicability of these standards to FB, especially for philanthropic ones, which usually do not have a fixed labor force - in general, they have the help of volunteers for the operationalization of the processes - and the physical spaces are “granted” by organizations and/or entities that, for the most part, tend to view the issue (FNS) as an investment strategy.

With the above in mind, it is necessary to emphasize that the MGP for FB must be developed by addressing the items that adapt to the establishment, describing them in a more detailed or succinct way, and obviously bringing the peculiarity component that is peculiar to it.

It is also important to emphasize that legislation requires standards of structure, equipment and facilities that are often unattainable. The characteristics of some FB require, to a certain extent, another MGP proposal that considers, above all, an expanded view from the FNS perspective, however, without neglecting the sanitary aspects. E.g., the everyday practice of following certain hygienic guidelines is equally relevant, and it is possible to have the process as a condition for the sanitary quality of the products.²⁶

Conclusion

The proposal of the Script for the Development of the Manual, specific for FB, makes it possible the approach of quality controls peculiar to the service. It includes items that are not normally included in Manuals of Good Practices for food services, such as the selection of products in the suppliers, the logistics processes, relevant documentation to receive and make donations, among others. Thus, the script contemplates the demand of development of specific materials for the sector, however, it is perceived the necessity of new studies that guide the realities of FB, aiming to deepen the theme, to instrumentalize professionals who work in the area, as well as to promote FNS of the so-called consumer centers (or recipient entities).

Finally, it is important to highlight that the Script only guides, gives elements for the implementation and maintenance of Good Practices in FB. On the other hand, it is worth noting that the document alone does not promote FNS of recipients, since there is a need to systematically implement what is described and/or to make adaptations to ensure the quality control of food handled by FB. In this sense, the aim is to raise the awareness of Bank Managers to channel efforts and provide financial resources, adequate physical structure and skilled workforce in order that the quality of donated food may be continuously guaranteed. On the other hand, empowering teams working with the tools, such as FB, with an expanded perspective on food quality is paramount in ensuring that only the FNS dimension - which pertains to safe food - is fulfilled according to its reality and that the social relations imbued in this process of giving and receiving are assured.

Collaborators

Paula NF worked on the conception of the article, bibliographic consultations and text elaboration; Assis L worked on the conception of the article, guiding the text elaboration, review and final analysis of the article; Ribeiro CSG and Bezerra I worked with contributions to the text, review and final analysis of the article.

Conflict of interest: the authors declare that there are no conflicts of interest.

References

1. Brasil. Presidência da República. Lei nº 11.346, de 15 de setembro de 2006. Cria o Sistema Nacional de Segurança Alimentar e Nutricional - SISAN com vistas a assegurar o direito humano à alimentação adequada, institui a Política Nacional de Segurança Alimentar e Nutricional - PNSAN, estabelece os parâmetros para a elaboração do Plano Nacional de Segurança Alimentar e Nutricional, e dá outras providências. Diário Oficial da União 18 set. 2006.

2. Prezotto LL. Qualidade ampla: referência para a pequena agroindústria rural inserida numa proposta de desenvolvimento regional descentralizado. Anais do 3o Colóquio Internacional sobre Transformações Territoriais; 23-25 ago. 2000; Florianópolis; UFSC.
3. São José JFB, Coelho AIM, Ferreira KR. Avaliação das boas práticas em unidade de alimentação e nutrição no município de Contagem-MG. Alim Nutr. 2011; 22(3):479-487.
4. Food Quality and Safety Systems. A training manual on food hygiene and the Hazard Analysis and Critical Control Point (HACCP) System. Rome: FAO; 1998. Disponível em: <http://www.fao.org/docrep/w8088e/w8088e00.htm#Contents>
5. Lucchese G. Descentralização e modelo sistêmico: o caso da vigilância sanitária. Ciênc Saúde Coletiva 2010; 15(Supl. 3):3318-3320.
6. Souza LEPF. A vigilância sanitária e a mudança do modelo de atenção à saúde. Ciênc Saúde Coletiva 2010; 15 (Supl. 3):3320-3322.
7. Souza MS, Medeiros LB, Saccol ALF. Implantação das boas práticas em UAN. Alim Nutr. 2013; 24(2):203-207.
8. Brasil. Agência Nacional de Vigilância Sanitária. Cartilha de vigilância sanitária: boas práticas para serviços de alimentação. 3ª ed. Brasília: ANVISA; 2004.
9. Prefeitura do Rio de Janeiro. Subsecretaria de Vigilância. Fiscalização Sanitária e Controle de Zoonoses. Roteiro para elaboração do manual de boas práticas [Internet]. Disponível em: <http://www.rio.rj.gov.br/web/vigilanciasanitaria/exibeconteudo?id=5116437>
10. Kraemer FB, Saddy MA, Garcia SRMC. Guia de elaboração do manual de boas práticas para manipulação de alimentos 2007. Rio de Janeiro: Conselho Regional de Nutricionistas - 4º Região - CRN-4; 2007.
11. São Paulo. Conselho Regional de Nutricionistas - 3º Região - CRN-3. Manual de boas práticas, modelo básico para orientação dos profissionais [Internet]. Núcleo Técnico do Conselho Regional de Nutricionistas. Disponível em: <http://crn3.org.br/Duvidas/AtuacaoProfissional>.
12. Loopstra R, Tarasuk V. The relationship between food banks and household food insecurity among low-income Toronto families. Canadian Public Policy 2012; 38(4):497-514.
13. Tarasuk V, Eakin JM. Charitable food assistance as symbolic gesture: an ethnographic study of food banks in Ontario. Soc Sci Med. 2003; 56:1505-1515.
14. Brasil. Ministério do Desenvolvimento Social e Agrário. Segurança Alimentar. Notícias. Bancos de alimentos combatem o desperdício. Disponível em: <http://mds.gov.br/area-de-imprensa/noticias/2015/junho/bancos-de-alimentos-combatem-desperdicio>
15. Brasil. Conselho Nacional de Segurança Alimentar e Nutricional. A segurança alimentar e nutricional e o direito humano à alimentação adequada no Brasil: indicadores e monitoramento da Constituição de 1988 aos dias atuais. Brasília: CONSEA; 2010.
16. Soares AG, Oliveira AGM, Fonseca MJO, Freire Júnior M. Boas práticas de manipulação em bancos de alimentos. Rio de Janeiro: Embrapa Agroindústrias de Alimentos; 2006.

17. Silva LC, Santos DB, São José JFB, Silva EMM. Boas práticas na manipulação de alimentos em Unidades de Alimentação e Nutrição. *Demetra* 2015; 10(4):797-820.
18. Amorim STSP, Moreira H, Carraro TE. A formação de pediatras e nutricionistas: a dimensão humana. *Rev Nutr.* 2001; 14(2):111-118.
19. Serviço Social do Comércio. Administração Regional Paraná. Direção de Saúde e Ação Social. Gerência de Saúde. Coordenação Estadual do Programa Mesa Brasil. Check List do Banco de Alimentos do Programa Mesa Brasil Sesc Paraná: Edição 2013; Curitiba: SESC; 2013.
20. Brasil. Ministério da Saúde. Portaria nº 1.428, de 26 de novembro de 1993. Determina que os estabelecimentos relacionados à área de alimentos, adotem, sob responsabilidade técnica, suas próprias Boas Práticas de Produção e/ou Prestação de serviços, seus Programas de Qualidade, e atendam aos Padrões de Identidade e Qualidade (PIQ's) para produtos e serviços na área de alimentos. *Diário Oficial da União* 02 dez. 1993.
21. Brasil. Ministério da Saúde. Secretaria de Vigilância Sanitária. Agência Nacional de Vigilância Sanitária. Resolução RDC nº 275, de 21 de outubro de 2002. Dispõe sobre o Regulamento Técnico de Procedimentos Operacionais Padronizados aplicados aos Estabelecimentos Produtores/Industrializadores de Alimentos e a Lista de Verificação das Boas Práticas de Fabricação em Estabelecimentos Produtores/Industrializadores de Alimentos. *Diário Oficial da União* 23 out. 2003.
22. Brasil. Ministério da Saúde. Secretaria de Vigilância Sanitária. Agência Nacional de Vigilância Sanitária. Resolução RDC nº 216, de 15 de setembro de 2004. Dispõe sobre regulamento técnico de boas práticas para serviços de alimentação. *Diário Oficial da União* 16 set. 2004.
23. Schottz V, Cintrão RP, Santos RM. Convergências entre a Política Nacional de SAN e a Construção de Normas Sanitárias para Produtos da Agricultura Familiar. *Vig Sanit Debate* 2014; 2(04):115-123.
24. Organização Pan-Americana da Saúde. *Codex alimentarius: higiene dos alimentos*. 3º ed. Brasília: OPAS; 2006. Textos Básicos.
25. Serviço Social do Comércio. Modalidades operacionais [Internet]. Disponível em: <http://www.sesc.com.br/mesabrazil/modalidades.html>.
26. Cruz FT. Qualidade e boas práticas de fabricação em um contexto de agroindústrias rurais de pequeno porte. [dissertação]. [Florianópolis]: Universidade Federal de Santa Catarina, Centro de Ciências Agrárias; 2007.

Received: May 19, 2016

Reviewed: January 29, 2017

Accepted: April 03, 2017

