

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

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Agenda Item 7

CX/SCH 17/03 CRD/8
Original Language Only

JOINT FAO/WHO FOOD STANDARDS PROGRAMME CODEX COMMITTEE ON SPICES AND CULINARY HERBS

3rd Session

Chennai, India, 6 -10 February 2017

Draft Standard for Oregano

(Comments of Argentina, European Union, Kenya, Malaysia, Thailand and Turkey)

ARGENTINA

General Comments: The eWG, chaired by Argentina and co-chaired by Turkey, there are a few points that need to be discussed.

Specific Comments:

1. Scope:

~~[It does not apply to the product when indicated as being intended for further processing.]~~

Argentina thinks that the sentence could be deleted because in the scope the three main uses are indicated, and does not add anything to these uses.

3.2. Quality Factors

3.2.1. Odour, Flavor and Colour:

“Dried oreganos shall have a characteristic odour and flavor fragrant,[warm], unpungent and bitter flavor (varying according to the chemical strain of the main components of the volatile oil (carvacrol and/or thymol). Dried oreganos shall be free from any foreign odour or flavor and especially from mustiness. The colour ranges from yellow green to dark green.”

Argentina considers that the sequence indicating the main components of the essential oil must remain in the text.

3.2.4. Chemical characteristics

The values that Argentina wants to propose are:

Extra: 2,5 / Cat I: 1,5 / Cat II: 1,2

Argentina considers that in order to define the quality of an aromatic species, three steps must be followed:

Determine the species: In the scope has been defined Origanum L., which discards non-oregano (Lippia and Origanum Majorana), which makes it easy to include the different types of oregano existing in the world.

Determine the quality: It means to define if this species is (Origanum L.) and if it is pure and does not contain contaminants, making physical-chemical determinations and by microscopy.

Determine quantity and quality of essential oil. It means knowing not only the total content, but also knowing the major components of the essential oil (Carvacrol and / or Thymol).

Argentina considers that the components of the volatile oil must remain as well as the methods for its determination, since there is great variability in the chemical composition of

the essential oil of oregano according to the origin, genetic material, productive environment and handling.

3.2.5 Physical characteristics

"² Foreign matter: visible and / or apparent matter or material not usually associated with the oregano. Foreign matter includes leaves such as olive leaves, strawberry leaves and sumac leaves."

Argentina proposes to replace the text with the following sentence: "It must not contain conditioned vegetable material that modifies the condition of oregano"

EUROPEAN UNION

The European Union and its Member States (EUMS) would like to submit the following comments:

Title

The EUMS support the title "Proposal draft Codex Standard for Oregano (*Origanum* spp. L.)", without mentioning the genus *Lippia*.

In the EU's view, botanical species which do not belong to the genus *Origanum* cannot be grouped all together under the commercial name of "oregano". It is important that there is a **botanical and chemical similarity** between the species that are included in the scope of the standard.

This appears to be misleading and it is particularly relevant when the two species do not belong either to the same genus (*Oreiganum*) or to the same family (*Lamiaceae*). While different species belonging to the genus *Oreiganum* could be considered similar (and hybridize naturally), this is not the case for plants belonging to the genus *Lippia*.

In the proposed draft standard for oregano the botanical and chemical similarity of the species considered as "oregano" are derived from three distinct parameters that are examined: (i) the botanical classification (genus *Origanum* L.1 fpara IT (iii the organoleptic properties fin particular odour and flavor, as formulated by the presence and ratio of mainly carvacrol and thymol in the volatile oil content) fpara 3.2.li and fiii) the volatile oil concentration in the product containing various levels of carvacrol and thymol fpara 3.2.4 Table I T.

Scope

The EUMS support the original scope of the proposed draft:

"This standard applies to dried leaves/flowers of species or hybrids of the genus *Origanum* L. from the *Lamiaceae* family (except **the species** *Origanum majorana* L.) offered for industrial food production and for direct consumption including for catering purposes or for repackaging if required."

Chapter 2.1, point(a)

The EUMS consider that the original wording of the draft standard should be retained "Dried oregano is the product: (a) obtained from the leaves and the flowering tops **of plants of the genus *Origanum* L. from the *Lamiaceae* family (except the species *Origanum majorana* L.)**". This seems to better reflects the products currently most widely traded.

Chapter 2.1, point(b)

The EUMS could support the new proposal currently into square brackets without a reference to *Lippia* spp.

[Dried oregano is the product obtained from the leaves and the flowering tops of *Origanum* L. spp and *Lippia* spp from the *Lamiaceae* family, except marjoram (*Origanum majorana* L.), prepared in an appropriate manner, having undergone operations such as cleaning, drying, rubbing, milling and sifting].

Chapter 2.3 Varietal types

The EUMS would propose the following text:

"Any wild grown species and hybrid or cultivated variety (cultivar) of **the genus *Origanum* L.** suitable for processing, except **the species *Origanum majorana***

The EUMS would like to express their preference to the following values regarding the volatile oil content of oregano that are in brackets in the current draft.

3.2.4. Chemical Characteristics

PARAMETERS	Requirements for [Whole or] Crushed/Rubbed styles			Requirements for Ground /Powdered styles		
	Extra	Class/ Grade I	Class/ Grade II	Extra	Class/ Grade I	Class/ Grade II
Volatile oil ml/100 g (dry basis) minimum	2,5	{1.5}, [2.00]	{1}, {1.2}, [1.75]	{1.5}, [1.75]	{1}, 1.1, [1.50],	[0.8], 1, {<1.1}

Those values are substantiated by several scientific publications.

1. Lucas B et al (2015), Essential oil diversity of European *Origanum vulgare* L. (Lamiaceae), Phytochemistry, 119, 32-40 (a free version of the same work is available

<http://www.ecpqr.cQiar.ora/fileadmin/templates/ecpqr.orq/upload/PROJECT REPORT S/Qriqanum vulgare Final report.pdf>

2. Torres et al 2012, Field Evaluation of Twelve Clones of Oregano Grown in the Main Production Areas of Argentina: Identification of Quantitative Trait with the Highest Discriminant Value, ISRN Agronomy <https://www.hindawi.com/iournals/isrn/2012/349565/>
3. Fleisher and Sneer (1982), Oregano spices and *Origanum* chemotypes J Sci Food Agrie, 33, 441-446.
4. Kokkini et al. (1997), Autumn essential oils of Greek oregano, Phytochemistry, 44, 883-886

KENYA

Title: We accept the original title that reads : "[Proposal Draft Codex Standard for Oregano (*Origanum* L spp and *Lippia* spp -"

COMMENT

SCOPE: Kenya proposes the scope to read as follows: " This standard applies to dried leaves/flowers of species or hybrids of the genus *Origanum*L. from the *Lami-aceae*family, except (*Origanum majorana* L.) offered for industrial food production and for direct consumption including for catering purposes or for repackaging if required".

Justification: Oregano is just used for direct consumption and catering purposes

COMMENT: we agree with the comment below (a)

2.DESCRPTION

2.1Product Definition

Dried oregano is the product:

- (a) Obtained from the leaves and the flowering tops of *Origanum*L. from the *Lamiaceae* family.

COMMENT: we agree with the comment below

2.3 Varietal Types

Any wild grown species and hybrid or cultivated variety (cultivar) of *Origanum* L. suitable for processing, except *Origanum majorana* L.

Justification: this does not give room for any other products other than oregano

3.2 Quality Factors

3.2.1 Odour, flavor and color

Dried oreganos shall have a characteristic odour and flavor fragrant, [warm], unpungent and bitter flavor (varying according to the chemical strain of the main components of the volatile oil (carvacrol and/or thymol).

Dried oreganos shall be free from any foreign odour or flavor and especially from mustiness. The colour ranges from yellow green to dark green.

COMMENT

We accept the word 'warm' as per organoleptic sense so we propose to open the brackets

3.2.4 Chemical characteristics

Kenya proposes the title to read as follows: "**Dried oregano shall comply with the chemical requirements limits as specified in Table 1.**"

In table 1: 5th Row [Artificial colors/flavorings Additives or foreign sub-stances] **We propose that it be deleted since**

Justification: It is captured in clause 4

MALAYSIA

a) Species covers by Draft Standard for Oregano

Malaysia is of the view that species covered by this proposed draft standard should be retained as per agreed by CCSC during its proposal as New Work.

b) Terms "industrial food production" and "further processing"

Malaysia is of the view that the definition for the terms "industrial food production" and "further processing" should be clearly defined for better clarity and understanding.

In addition, Malaysia supports if USA's approach and recommendation as in the Draft Standard for Cumin is apply for Draft Standard for Oregano, provided the term "industrial processing" is clearly defined.

"This Standard applies to offered as a condiment and for direct human consumption, commercial food processing or for repackaging if required. It excludesintended for industrial processing."

THAILAND

General Comments on Agenda Item 4 -7: Draft Standard and Proposed Draft Standard

In general, Thailand has no objection on the Draft Standard of Cumin and Thyme and Proposed Draft Standard of BWG pepper and Oregano. However, we do consider that all aforesaid documents should be in consistent with the adopted codex standard of other Codex committees. In addition, we would like to provide some suggestions as described below:

SECTION 1: SCOPE

1. The scope of the commodity standards for spices and culinary herbs should be similar in writing style, in which the main objective is for direct (human) consumption, whereas industrial food processing, catering purpose or repackaging are the processes eventually intended for human consumption.

2. The phrase "intended for further processing" should be used as it has been commonly used in various adopted codex standard and the meaning is clearly defined as the processing of a product from its original state to other kinds of products.

3. The proposed definitions for "further processing" and "industrial processing" are unnecessary. The term "further processing" may cause confusion against "post-harvesting" activities, while the meaning of "industrial processing" is ambiguous because it is usually applied in a very large scale production. In fact, small scale production is also applied for the processing of dried spices and herbs such as homemade essential oils or incense.

4. Thailand would like to recommend the following template of revised Scope as follows:

"This Standard applies to of the Family, offered as a condiment or an ingredient and for direct consumption, industrial food processing or repackaging, if required. It does not apply to the product when indicated as being intended for further processing."

SECTION 3.2.2: INFESTATION

1. This section (infestation) should specify only for live insect by referring to the definition of the term “infestation (of a commodity)” in International Standard for Phytosanitary Measure (ISPM) No.5 Glossary of phytosanitary terms as follows:

“**infestation (of a commodity)** means presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection.”

2. The dead insects, insect fragments and rodent contamination should be identified as filth and these parameters should be grouped into a new section, “Defects and allowances”.

SECTION 3.2.4: PHYSICAL CHARACTERISTICS

1. We disagree with the inclusion of extraneous matters, foreign matters, insect damages or mold visible which specified under the section physical characteristics because all of these parameters are undesirable. In fact, they should be defined in section “defects” as the minimum acceptance is required. So, we would like to propose a new section, “defects and allowances” to cover these parameters. They should be specified as minimum, or maximum, or ranges of acceptance values; otherwise they may be use to classify a commodity, if necessary.

2. The definitions of “extraneous matters” and “foreign matters” in the entire proposed draft standard should be correlated. In addition, we would like to support to use the term “extraneous vegetable matters” instead of “extraneous matters” for better clarification.

SECTION 3.4: LOT ACCEPTANCE

We would like to propose that the acceptable quality limit (AQL) level for each sampling plan should be identified in this section in the same format as in the adopted codex standard of processed fruits and vegetables.

SECTION 7: WEIGHTS AND MEASURES

We would like to propose to add additional requirements on “defective of container” and “lot acceptance” to provide an allowance of weight of defective container. Format of codex standard of processed fruits and vegetables may be used as guidelines.

Specific Comments Proposed Draft Standard for Oregano

Thailand would like to provide suggestions on this document as follows:

1. We would like to propose that the plants in genus *Lippia* should not be included in the Product Definition of Oregano. Although the flavor of the plants in genus *Lippia* is similar to that of *Origanum*, its qualities may be different or lower. In addition, it is difficult to identify adulteration in the product.

2. We would like to propose to amend the Product Definition in Section 2.1 by adding the phrase “before the final packaging and storage” at the end of the paragraph. This addition will clarify the definition of the product starting from raw material to the product in a container ready for sale.

3. We would like to propose to amend Section 3.2.3 classification, in the same format as the draft standard for cumin and thyme.

TURKEY

The Republic of Turkey appreciates the work performed by the electronic Working Group (eWG) led by Argentina. And Turkey as the co-chair of the eWG provides the following comments on the Draft Standard for Oregano.

General Comments: The eWG, chaired by Argentina and co-chaired by Turkey, working in English, redrafted the Standard for Oregano taking into account the earlier discussions, written comments and relevant decisions regarding the format of the other standards, Thyme and Cumin, currently under elaboration. Although the eWG could not use the Codex Online Commenting Systems (OCS), there are a few points that need to be discussed. One of them is the “scope” and the other one is the “style” and the last one is “amount of volatile oils”.

1. Scope: Some members (Mexico and the USA) requested very last minute that *Lippia* spp. should be included in the draft standard. However the CCSC had approved to prepare a draft standard for Oregano L. excluding Marjoram or Thyme or *Lippia*. During the second circulation of the draft, most of the eWG members

e.g. Argentina, Turkey, Paraguay, EU (especially Greece) underlined the scope of the standard and disagreed on the inclusion of *Lippia* spp to the draft.

Turkey suggests that a new draft standard for *Lippia* may be prepared separately, after approving by the CCSC. It is very welcome by Turkey. If the draft includes *Lippia*, scope of the standard is not acceptable neither science-based taxonomy nor physical/chemical requirements.

In the Scope, [It does not apply to the product when indicated as being intended for further processing.] The sentence between square brackets could be deleted. Because the scope is very clear including for direct consumption and for catering. Therefore, the standard is invalidated if the sentence is not deleted.

2.2. Style: Dried oregano is obtained from leaves/flowers not from seeds. To protect the volatile compounds, it is important the product being kept without crushing as possible as it is. Therefore, instead of three, two style (also supported by Chile) is enough to define the product. In order to limit the powder amount of Oregano, there is a parameter in Table 1.

3.2.3. Classification and 3.2.4. Physical Characteristics: Parameters specified in Table 1, they are not measurable for ground/powdered oregano. Therefore, physical parameters are defined just for “2.2. Style point (a)”. In other words, physical classification for ground/powdered oregano is not applicable (see Table 3, visual examination).

3.2.5. Chemical Characteristics: Dried oregano has a characteristic odour and flavor varying according to the chemical strain of the main components of the volatile oil especially carvacrol. Volatile oil amount for the dried oregano produced in Turkey is ranges between 3-4.5%. Therefore, as the biggest producer in the world, Turkey supports the ranges not less than 2.5-1.5% in class.

10.1. Methods of Analysis: The methods are updated in accordance with the last edition of methods.

Taking into consideration Turkey's comments, the draft standard is revised as below (ANNEX I).

DRAFT STANDARD FOR OREGANO (*Origanum* L.)**(At Step 3)****1. SCOPE**

This standard applies to dried leaves/flowers of species or hybrids of the genus *Origanum* L. from the *Lamiaceae* family, except (*Origanum majorana* L.) offered for industrial food production and for direct consumption including for catering purposes or for repackaging if required.

2. DESCRIPTION**2.1. Product Definition**

Dried oregano is the product obtained from the leaves and the flowering tops of *Origanum* L. from the *Lamiaceae* family, and processed in an appropriate manner, undergoing operations such as cleaning, drying, rubbing, and sifting.

2.2. Styles

Dried oregano may be offered in one of the following styles:

- a) Whole/Crushed/Rubbed: processed into varying degrees ranging from a course to fine crush
- b) Ground/Powdered: processed into powders

2.3. Varietal Types

Any wild grown species and varieties or cultivars and hybrids belonging to genus *Origanum* L. from the *Lamiaceae* family, except (*Origanum majorana* L.), which are suitable for processing.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS**3.1. Composition**

Product as defined in Section 2.

3.2. Quality Factors**3.2.1. Odour, flavor and colour**

Dried oregano shall have a characteristic odour and flavor (fragrant, warm, unpungent and bitter flavour) varying according to the chemical strain of the main components of the volatile oil (carvacrol and/or thymol). Dried oregano shall be free from any foreign odour or flavor and especially from mustiness. Dried oregano shall have a characteristic colour varying from pale greyish yellow green to dark green.

3.2.2. Infestation

Dried oregano shall be free from live insects and practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision).

3.2.3. Classification

Whole/Crushed/Rubbed oregano are classified in three classes/grades according physical and chemical requirements as specified in Table 1 and 2, respectively. On the other hand, classification for ground/powdered oregano is not applicable.

- Extra
- Grade/Class I
- Grade /Class II

3.2.4. Physical Characteristics

Whole/Crushed/Rubbed oregano shall comply with the physical requirements specified in Table 1. On the other hand, classification for ground/powdered oregano is not applicable.

Table 1. Physical requirements for whole/crushed/rubbed oregano

Parameters	Extra	Class/Grade I	Class/Grade II
Extraneous matter ⁽¹⁾ (maximum % mass fraction)	1	2	2
Foreign matter content ⁽²⁾ (maximum % mass fraction)	0.1	0.1	0.1
Oregano powder (smaller than 40 mesh/420 µm maximum %)	5	10	20

(1): All vegetable matter from the specific plant other than the required part. The proportion of stalks which have dimensions exceeding 7 mm in length and 3 mm in diameter shall not be more than 50% (w/w) of total extraneous matter content.

(2): Any visible and/or apparent matter or material not usually associated with the oregano such as olive leaves, strawberry leaves and sumac leaves.

3.2.5. Chemical Characteristics

Whole/crushed/rubbed oregano and ground/powdered oregano shall comply with the chemical requirements specified in Table 2.

Table 2. Chemical requirements for whole/crushed/rubbed oregano and ground/powdered oregano

Parameters	Whole/Crushed/Rubbed oregano			Ground /Powdered oregano
	Extra	Class/ Grade I	Class/ Grade II	
Moisture, % mass fraction, maximum	11	12	12	12
Total ash, % mas fraction (dry basis), maximum	9	10	12	12
Acid-insoluble ash, %mass fraction (dry basis), maximum	1.2	2	2	2.5
Volatile oils, ml/100 g (dry basis), minimum	2.5	2.0	1.5	1.5

3.3. Classification of “Defectives”

The representative sample taken from a lot that fails to meet one or more of the applicable quality requirements, as set out in Section 3.2 (except those based on sample averages), should be considered as a “defective”.

3.4 Lot Acceptance

A lot should be considered as meeting the applicable quality requirements referred to in Section 3.2 when the number of “defectives”, as defined in Section 3.3, does not exceed the acceptance number of the appropriate

sampling plan. For factors evaluated on a sample average, a lot will be considered acceptable if the average meets the specified tolerance, and no individual sample is excessively out of tolerance.

4. FOOD ADDITIVES

No food additives and flavorings are permitted in the products covered by this standard.

5. CONTAMINANTS

5.1. The products covered by this Standard shall comply with the maximum levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CODEX STAN 193-1995).

5.2. The products covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. FOOD HYGIENE

6.1. It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CAC/RCP 1-1969), the *Code of Hygienic Practice for Spices and Dried Aromatic Herbs* (CAC/RCP 42-1995 under Rev) and other relevant Codex texts, such as codes of hygienic practice and codes of practice.

6.2. The products shall comply with any microbiological criteria established in accordance with the *Principles for the Establishment and Application of Microbiological Criteria for Foods* (CAC/GL 21-1997).

7. WEIGHTS AND MEASURES

Containers shall be as full as practicable without impairment of quality and shall be consistent with a proper declaration of contents for the product.

8. PACKAGING AND PRESENTATION

8.1. Uniformity

The contents of each package must be uniform, including particle size, and must only contain oregano of the same species, variety, cultivar and/or commercial type and quality. The visible part of the package must be representative of the entire contents.

9. LABELLING

9.1. The products covered by the provisions of this Standard shall be labelled in accordance with the *General Standard for the Labelling of Pre-packaged Foods* (CODEX STAN 1-1985). In addition, the following specific provisions apply:

9.2. Name of the Product

9.2.1. The name of the product shall be "dried oregano".

9.2.2. The name of the product may include an indication of the species, varietal types and the style as described in Section 2.2. and as well as of the product classification, as described in Section 3.2.3.

9.3. Labelling of Non-Retail Containers

Information for non-retail containers shall be given either on the package or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container. However, lot identification, and the

name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

10. METHODS OF ANALYSIS AND SAMPLING

10.1. Methods of Analysis

Table 3. Methods of Analysis

Provision	Method	Principle
Moisture	ISO 939:1980 [ISO 760:1978] AOAC 941.11 [AOAC 986.21] ASTA 2.0	Distillation
Total ash	ISO 928:1997 AOAC 941.12 ASTA 3.0	Gravimetry
Acid-insoluble ash	ISO 930:1997 ASTA 4.0	Gravimetry
Volatile oils	ISO 6571:2008 AOAC 962.17 ASTA 5.0	Distillation
Extraneous matter	ISO 927:2009 ASTA 14.1	Visual examination
Foreign matter	ISO 927:2009 ASTA 26.0	Visual examination

10.2. Sampling Plan

[To be developed]

SCIENTIFIC OPINION FOR OREGANO AND LIPPIA

Prepared by Turkey ⁽¹⁾OREGANO:

All plants called as Oregano are rich in phenolic monoterpenes, mainly carvacrol. These plants are grouped in four botanical families: Asteraceae, Fabaceae, Lamiaceae and Verbenaceae. The importance of oregano is due its characteristic use as a food condiment and its medicinal properties. And essential oil obtained from Oregano is used in both the pharmaceutical and food industry to produce fragrances, detergents, cosmetics, and as a flavoring.

When preparing a plant standard, having standard and measurable properties for the plant are the most important issue. Therefore, *O. onites* L. (syn. *O. smyrneum* L.) and *O. vulgare* ssp. *hirtum* (Link) lestwaart (syn. *O. hirtum* Link) have been accepted as a main and source plants for Oregano. Oregano has an international commercial prominence and the essential volatile oil component is carvacrol. Chemical variation is standard for five Oregano spp. that are exported all around the world. The oil yield and the carvacrol amounts of these species are as shown in Table (1).

Table 1. Properties of the most commercial Oregano spp.

<i>Origanum</i> species	Oil yield %	carvacrol %
<i>O. onites</i> L. (syn. <i>O. smyrneum</i> L.)	0.1 – 4.8	19- 82
<i>O. vulgare</i> ssp. <i>hirtum</i> (Link) lestwaart (syn. <i>O. hirtum</i> Link)	1.3 - 3.9	44- 85
<i>O. minutiflorum</i> O. Schwarz&P.H.Davis	1.1- 2.5	42- 84
<i>O. dubium</i> Boiss.	1.3- 7.7	38-88
<i>O. syriacum</i> var. <i>Bevani</i> (Holmes) lestwaart	0.4-3.8	43-79

In addition to that *O. onites* and *O. vulgare* L. subsp. *hirtum* is defined as a source plants in the European Pharmacopoeia. Oregano monography ⁽²⁾ in the European Pharmacopoeia was officially approved and published in 2005. It has been still in force. In the Oregano monography, *Origanum onites* L (Izmir Kekiği, called Turkish) and *Origanum vulgare* L. subsp. *hirtum* (Istanbul Kekiği, called Turkish) and the mixture of these two species are approved as Oregano.

LIPPIA:

Mexican oregano is composed by a wide range of endemic species and varieties. *Lippia graveolens* Humb.,Bonpl&Kunth (syn: *Lippia berlandieri* Schauer) ⁽³⁾ has first priority and the others are *Lippia palmeri*, *Hedeoma patens* ⁽⁴⁾, *Poliomintha glabrescens* Gray, *Lantana macropoda*, *Alysia macrostachya* ⁽⁵⁾. Therefore,

⁽¹⁾ : Prepared by Turkish CCP & the Scientific Commission on Plants Intended To Be Used For Foods,
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main plants called as Mexican Oregano has even not from same species and wide apart Mexican Oregano that are placed in the market has also different chemical properties. Very well known by all that Lippia species in Verbanaceae family has taxonomic problems (6). In general, Lippia graveolens is harvested from non-cultivated populations. And in accordance with the essential-oil yield and composition, there are three chemotypes (7). In many instances, the chemical diversity of secondary compounds does not only occur between and within plant families and genera but also within populations of a single species, forming chemotypes. These chemotypes are produced either phenolic (carvacrol and thymol) or non-phenolic (geraniol, alphaterpeniol, thuyanol and linalool) compounds as dominant compounds. And it was also demonstrated that there is no ecological and geographical relations between chemotypes. And it is possible that different chemotypes are presented in the same region (8). Harvesting Mexican Oregano even from same location have not had standard properties.

The research carried out for 12 samples of *Lippia berlandieri* growing in greenhouse. The amount of essential oil, carvacrol and thymol was found 0.7 – 2.5%, 15.7- 50.0% and 22.7- 53.9%, respectively (9).

The study was reported a comparative analysis of the chemical compositions and pharmacological properties of the essential oils obtained from Mexican oreganos, *Poliomintha longiflora* and *Lippia graveolens*. The major compositions, carvacrol and *p*-cymene are 18.36% and 13.48%, and 14.09 and 7.46, respectively. The amount of thymol is 13.78% in the sample containing 13.48% carvacrol (10).

Comparison between oregano and lippia:

Turkish Oregano (*Origanum onites* L.) is a major aromatic plant that belongs to Labiatae family. In this research, fourteen Turkish oregano clones had been characterized chemically and genetically. Carvacrol was found to be the main component in all clones except only one clone, the main component of which was thymol (11). In the same issue, the study was established that fourteen wild population for *Lippia graveolens* had three chemotypes and it was determined two or three chemotypes were growing in the same location (12). All references given in the paper are demonstrated that it is not enough to achieve a standard product from Lippia, since it has different species and different chemical compositions. The main properties for the Oregano is that the essential oil is carvacrol not thymol. Therefore, it is so difficult for preparing standard product that is obtained from higher thymol amount of Lippia.

SPECIAL COMMENT:

In accordance with the papers (see in references) compiled in this document, preparing a standard including both Oregano and Lippia is not be a science-based standard, in other words, it is not supported by science. In the contrary, it is difficult for setting the standard properties of the product that is prepared from mixture of Oregano and Lippia. And also it affects the quality of food including mixture of them.

It is highlighted that the standard properties of *Origanum onites* L. and *Origanum vulgare* L. subsp. *hirtum* is approved in a source plant in the European Pharmacopoeia and published as Oregano monography.

Turkey support that separate standard for Lippia could be prepared.

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