

NOSB NATIONAL LIST FILE CHECKLIST

PROCESSING

MATERIAL NAME: #4 Enzymes: malted barley



NOSB Database Form



References



MSDS (or equivalent)



FASP (FDA)



TAP Reviews from: Joe Montecalvo, Rich
Theuer, Steve Taylor

**NOSB/NATIONAL LIST
COMMENT FORM
PROCESSING**

Material Name: #4 Enzymes: malted barley

Please use this page to write down comments, questions, and your anticipated vote(s).

COMMENTS/QUESTIONS:

1. In my opinion, this material is:

_____ Synthetic _____ Non-synthetic.

2. Should this material be allowed in an “organic food” (95% or higher organic ingredients)? _____ Yes _____ No

(IF NO, PROCEED TO QUESTION 3.)

3. Should this substance be allowed in a “food made with organic ingredients” (50% or higher organic ingredients)? _____ Yes _____ No

TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: Aug. 5, 1996

Name of Material: Enzymes: malted barley

Reviewer Name: Steve L. Taylor RECEIVED AUG 05 1996

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Non-synthetic

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, Non-synthetic (Allowed as an ingredient in organic food)

Non-synthetic (Allowed as a processing aid for organic food)

or, this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List?

Extraction does not change the nature of this material

Please comment on the accuracy of the information in the file:

Any additional comments? (attachments welcomed)

Do you have a commercial interest in this material? Yes; No

Signature Steve Taylor Date 8/5/96

**Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)**

- (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

None

- (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

None

- (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

None

- (4) the effect of the substance on human health;

None except for rare allergic reactions to barley

- (5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

- (6) the alternatives to using the substance in terms of practices or other available materials; and

- (7) its compatibility with a system of sustainable agriculture.

TAP REVIEWER COMMENT FORM for USDA/NOSB

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This file is due back to us by: Aug. 5, 1996

Name of Material: Enzymes: malted barley

Reviewer Name: RC Heuer RECEIVED AUG 05 1996

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

NON-SYNTHETIC

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, Non-synthetic (Allowed as an ingredient in organic food)

Non-synthetic (Allowed as a processing aid for organic food)

or, this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List?

Please comment on the accuracy of the information in the file:

ADEQUATE

Any additional comments? (attachments welcomed)

Do you have a commercial interest in this material? Yes; No

Signature RC Heuer

Date 8/5/96

USDA/TAP REVIEWER
COMMENT FORM

Mailing date: 1 Jul 1996.

Due date: 5 Aug 1996

Name of Materials: Enzymes, malted barley
Reviewer Name: Richard C. Theuer

NON-SYNTHETIC: Germinating barley develops economically useful levels of carbohydrate digesting enzymes that are well known in the brewing industry and in the baking industry. In both these cases, these enzymes break down starches to simple sugars that the yeast can grow on and produce the carbon dioxide needed to make bread rise and beer fizz.

Barley enzymes are natural materials in themselves. The specific carriers and stabilizers used to keep them mold-free and stable need to be reviewed separately. A preparation of a non-synthetic plant enzyme preserved with a synthetic preservative would be "synthetic."

COMMENTS RE SECTION 2119(m) CRITERIA:

1. Inhalation of enzyme preparations can cause illness and allergic symptoms in sensitive individuals. Breathing protection should be used.
2. Use of plant-derived enzymes such as malted barley is very consistent with sustainable agriculture.
3. When heated, enzymes are denatured and become inactive. Denatured enzymes serve as dietary protein.
4. Barley contains gluten, so foods made with barley enzymes should have the ingredient listed on the ingredient declaration.

The following natural substance should be allowed as an ingredient in organic foods. It should not be added to the National List of natural substances prohibited for use as ingredients or processing aids in Organic Food:

Malted barley	Barley malt enzymes
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August 5, 1996

TAP REVIEWER COMMENT FORM for USDA/NOSB

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This file is due back to us by: Aug. 5, 1996

Name of Material: Enzymes: malted barley

Reviewer Name: JOE Montecarlo RECEIVED AUG 05 1996

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Non synthetic

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:
 Synthetic Allowed Prohibited Natural
or, Non-synthetic (Allowed as an ingredient in organic food)
 Non-synthetic (Allowed as a processing aid for organic food)
or, this material should not be on the National List

Are there any use restrictions or limitations that should be placed on this material on the National List? the ENZYME preparation must come from certified organic barley which has been germinated then dried. the MALT now contains ENZYMES that can breakdown starch to MALTose (two molecules of glucose) and to free glucose
ie Starch $\xrightarrow{\text{MALTase}}$ MALTose $\xrightarrow{\quad}$ 2 glucose

Please comment on the accuracy of the information in the file:
PARTIAL

Any additional comments? (attachments welcomed)
NONE

Do you have a commercial interest in this material? Yes; No

Signature Dr. Joe Montecarlo Date 7/20/96

Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)

- (1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

None

- (2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

None

- (3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance; None

- (4) the effect of the substance on human health;

None; but maltose (End product) of ENZYME hydrolysis of starch is considered
A PARENTERAL supplement of SUGAR for diabetics.

- (5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

None

- (6) the alternatives to using the substance in terms of practices or other available materials; and

Other ENZYME SYSTEMS - containing AMYLASE - However, malted barley is a good choice. Better organic ENZYME SYSTEM

- (7) its compatibility with a system of sustainable agriculture. Excellent!

NOSB Materials Database

1

Identification

Common Name Enzymes: malted barley Chemical Name
Other Names Malt
Code #: CAS Code #: Other
N. L. Category Non-agricultural MSDS yes no

Chemistry

Family
Composition Biologically active proteins which are sometimes conjugated with metals, carbohydrates and/or lipids. Whole cells, parts of cells, or cell-free extracts.
Properties Activity measured according to reaction catalyzed by individual enzymes.
How Made Malt is the product of the controlled germination of barley
Type of Use Processing

Use/Action

Specific Use(s) Dough conditioner in baking; baking; manufacture of alcoholic beverages, ^{Beer} manufacture of syrups
Action Enzymes as biocatalysts accelerate the rate of specific chemical reactions. Each enzyme is highly specific as to the reaction it effects.
Combinations ↪ Also used to manufacture MALTED MILK AND MALT SYRUP

Status

OFPA
N. L. Restriction
EPA, FDA, etc
Directions
Safety Guidelines
Historical status
International status

NOSB Materials Database

1

Identification

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Other Names **Malt**
Code #: CAS Code #: Other
N. L. Category **Non-agricultural** MSDS yes no

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Composition **Biologically active proteins which are sometimes conjugated with metals, carbohydrates and/or lipids. Whole cells, parts of cells, or cell-free extracts.**
Properties **Activity measured according to reaction catalyzed by individual enzymes.**
How Made **Malt is the product of the controlled germination of barley**
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Specific Use(s) **Dough conditioner in baking; baking; manufacture of alcoholic beverages, manufacture of syrups**
Action **Enzymes as biocatalysts accelerate the rate of specific chemical reactions. Each enzyme is highly specific as to the reaction it effects.**
Combinations

Status

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