

• https://www.youtube.com/watch?v=gtdd8CqAQ90 You Make The Call



Program Review Time/Temperature control for safety food (TCS Food) definition • Review TCS Food tools Relative Risk of TCS Foods TCS Food or Not voting and discussion

3

TCS Food - Definition Time/Temperature Control for Safety Food (formerly "potentially hazardous food" (PHF)). (1) "Time/temperature control for safety food" means a FOOD that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation.

TCS Food - Definition

2

4

6

(2) "Time/temperature control for safety food" includes: (a) An animal FOOD that is raw or heat-treated; a plant FOOD that is heat-treated or consists of raw seed sprouts, cut melons, cut leafy greens, cut tomatoes or mixtures of cut tomatoes that are not modified in a way so that they are unable to support pathogenic microorganism growth or toxin formation, or garlic-in-oil mixtures that are not modified in a way so that they are unable to support pathogenic microorganism growth or toxin formation; and



5

TCS Food - Definition

(2) "Time/temperature control for safety food" includes:

(b) Except as specified in Subparagraph (3)(d) of this definition, a FOOD that because of the interaction of its AW and PH values is designated as Product Assessment Required (PA) in Table A or B of this definition:



8

Table A. Interaction of pH and A_W for control of spores in FOOD heat-treated to destroy vegetative cells and subsequently PACKAGED

Aw values	pH: 4.6 or less	pH: > 4.6 - 5.6	pH: > 5.6
≤0.92	non-TCS FOOD*	non-TCS FOOD	non-TCS FOOD
> 0.92 - 0.95	non-TCS FOOD	non-TCS FOOD	PA**
> 0.95	non-TCS FOOD	PA	PA

* TCS FOOD means TIME/TEMPERATURE CONTROL FOR SAFETY FOOD
** PA means Product Assessment required



7

Table B. Interaction of pH and A_{M} for control of vegetative cells and spores in FOOD not heat-treated or heat-treated but not PACKAGED

Aw values	pH: < 4.2	pH: 4.2 - 4.6	pH: > 4.6 - 5.0	pH: > 5.0
< 0.88	non-TCS food*	Non-TCS food	non-TCS food	non-TCS food
0.88 - 0.90	non-TCS food	non-TCS food	non-TCS food	PA**
> 0.90 - 0.92	non-TCS food	non-TCS food	PA	PA
> 0.92	non-TCS food	PA	PA	PA

* TCS FOOD means TIME/TEMPERATURE CONTROL FOR SAFETY FOOD
** PA means Product Assessment required

9







(a) An air-cooled hard-boiled egg with shell intact, or an EGG with shell intact that is not hard-boiled, but has been pasteurized to destroy all viable salmonellae;



10

12

(3) "Time/temperature control for safety food" does not include:

(b) A FOOD in an unopened HERMETICALLY SEALED CONTAINTER that is commercially processed to achieve and maintain commercial sterility under conditions of non-refrigerated storage and distribution;



(3) "Time/temperature control for safety food" does not include:

(c) A FOOD that because of its PH or AW value, or interaction of AW and PH values, is designated as a non-TCS FOOD in Table A or B of this definition;



(3) "Time/temperature control for safety food" does <u>not</u> include:

(d) A FOOD that is designated as Product Assessment Required (PA) in Table A or B of this definition and has undergone a Product Assessment showing that the growth or toxin formation of pathogenic microorganisms that are reasonably likely to occur in that FOOD is precluded due to:

(i) Intrinsic factors including added on adurance of the precluded of the toxin that th

(i) Intrinsic factors including added or natural characteristics of the FOOD such as preservatives, antimicrobials, humectants, acidulants, or nutrients, (ii) Extrinsic factors including environmental or operational factors that affect the FOOD such as packaging, modified atmosphere such as REDUCED DXYGEN PACKAGING, shell life and use, or temperature range of storage and use, or

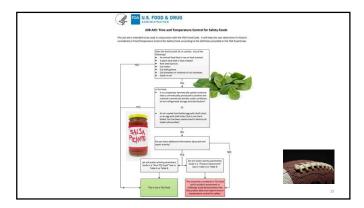


(3) "Time/temperature control for safety food" does not include:

(e) A FOOD that does not support the growth or toxin formation of pathogenic microorganisms in accordance with one of the Subparagraphs (3)(a) - (3)(d) of this definition even though the FOOD may contain a pathogenic microorganism or chemical or physical contaminant at a level sufficient to cause illness or injury.



13 14



All TCS Foods are not equal

- Date marking exemptions
- Competing microorganisms?

Pathogen	pH Range	Growth Temperature Range
L. monocytogenes	4.5 – 9.6	34°F – 113°F
S. aureus	4.8 - 8.0	39°F – 115°F
Salmonella spp	4.1 - 9.0	43°F – 115°F
E. Coli O157:H7	Survives 3.6	39°F – 113°F
C. perfringens	5.0 - 9.0	59°F – 131°F
B. cereus	4.9 - 9.3	50°F - 91°F
C. botulinum	4.6 - 8.9	37°F – 113°F
C. jejuni	4.9 - 9.0	86°F – 122°F



15 16

3-501.19 Table 1. The USDA Pathogen Modeling Program estimation of growth (Log CFU/g) of several pathogens for 6 hours or 8 hours, at 65°F.

PATHOGENS	6 Hours	8 HOURS
B. cereus (vegetative cells)	0.62	0.87
E. coli	0.35	0.52
L. monocytogenes	0.47	0.71
Salmonella Spp.	0.25	0.41
S. flexneri	0.26*	0.34*
S. aureus	0.38*	0.51*

* Model predictions were in 5 hour increments, the 6 and 8 hour data was extrapolated between 5 hour and 10 hour predictions.





17 18

White Bread

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS
- 5. Need More Info



Focaccia

- 1. Definitely TCS
- 2. Probably TCS
- Probably <u>Not TCS</u>
 Definitely <u>Not TCS</u>
- 5. Need More Info



19

20

BBQ Sauce (Made on-site)

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS
- 5. Need More Info



Salsa (Fresh, made on-site)

- 1. Definitely TCS
- 2. Probably TCS
- Probably <u>Not TCS</u>
 Definitely <u>Not TCS</u>
- 5. Need More Info



21

22

Salsa (Cooked, made on-site)

- 1. Definitely TCS
- 2. Probably TCS
- Probably <u>Not TCS</u>
 Definitely <u>Not TCS</u>
- 5. Need More Info



Boba (Tapioca pearls)

- 1. Definitely TCS
- Probably TCS
 Probably Not TCS
- Definitely <u>Not TCS</u>

 4. Definitely <u>Not TCS</u>
- 5. Need More Info



23

Banana Cream Pie

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS 5. Need More Info



Pumpkin Pie

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS 4. Definitely Not TCS
- 5. Need More Info

26



25

Cream Cheese Frosting

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS 5. Need More Info



Raw Meat and Poultry

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS 5. Need More Info



27

28



Nut Milks

- 1. Definitely TCS
- Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS Need More Info

Nut Cheese

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS 5. Need More Info



29

30



Bacon (Cooked)

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS
- 5. Need More Info

Batter (used w/raw chicken)

1. Definitely TCS
2. Probably TCS
3. Probably Not TCS
4. Definitely Not TCS
5. Need More Info

31



Waffle Batter

- 1. Definitely TCS
- 2. Probably TCS
- 3. Probably Not TCS
- 4. Definitely Not TCS
- 5. Need More Info



3

Hash Browns (Reconstituted)

- 1. Definitely TCS
- 2. Probably TCS
- Probably <u>Not TCS</u>
 Definitely <u>Not TCS</u>
- 5. Need More Info



Tea (in room temperature dispenser-unsweet)

1. Definitely TCS

32

- Probably TCS
 Probably Not TCS
- Definitely Not TCS
- 5. Need More Info

36



35



