

# ISO 20976-2:2022-10 (E)

## Microbiology of the food chain - Requirements and guidelines for conducting challenge tests of food and feed products - Part 2: Challenge tests to study inactivation potential and kinetic parameters

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	Principle .....	5
5	Apparatus .....	7
6	Culture media and reagents .....	7
7	Study design and sampling .....	7
7.1	General .....	7
7.2	Setting target reduction level for the inactivation study .....	8
7.3	Number of batches .....	8
7.4	Preparation of the test units .....	8
7.5	Number of control units and test units .....	9
8	Selection of strains .....	9
9	Preparation of the inoculum .....	9
9.1	General .....	9
9.2	Preparation of the vegetative cells .....	10
9.3	Preparation of the spores .....	10
10	Inoculation of the test units .....	10
11	Controls .....	12
11.1	Uninoculated controls .....	12
11.2	Inoculated controls .....	12
12	Treatment of the test units .....	12
13	Analysis .....	12
14	Expression of the results .....	13
14.1	General .....	13
14.2	Inactivation potential .....	13
14.3	Inactivation kinetics parameters .....	14
14.3.1	General .....	14
14.3.2	Primary inactivation kinetics parameters .....	14
14.3.3	Secondary inactivation kinetics parameters .....	15
14.4	Simulation of inactivation .....	15

<b>15</b>	<b>Test report .....</b>	<b>16</b>
<b>15.1</b>	<b>General .....</b>	<b>16</b>
<b>15.2</b>	<b>Aim of the study, type of challenge test and target reduction level .....</b>	<b>16</b>
<b>15.3</b>	<b>Experimental protocol .....</b>	<b>17</b>
<b>15.4</b>	<b>Sample analysis .....</b>	<b>17</b>
<b>15.5</b>	<b>Results .....</b>	<b>17</b>
<b>15.6</b>	<b>Conclusions .....</b>	<b>18</b>
<b>15.7</b>	<b>Reference documents .....</b>	<b>18</b>
<b>Annex A (informative) Selection of the type and the location of inactivation study .....</b>		<b>19</b>
<b>Annex B (normative) Minimum number of units to prepare for the inactivation studies .....</b>		<b>20</b>
<b>Annex C (informative) Examples of inoculation techniques .....</b>		<b>21</b>
<b>Bibliography .....</b>		<b>23</b>