

NITRATE TEST KIT

1 set / 70 tests

Detection Limit: 2 mg./kg. (ppm.)

Compose of: Nitrate test reagent 35 tests / bottle 2 bottles
 Nitrate standard A, B, C, D 1 bottle / each
 Sample bottle 3 bottles
 Small test tube 7 tubes

Testing of nitrate in drinking water

1. Pour the sample of drinking water in to the sample bottle about 1/2 of the bottle.
2. Add each 20 drops of Nitrate test reagent in to the 2 tubes, tube 1 for Nitrate standard D and tube 2 for sample.
3. Put one drop of Nitrate standard D in to the tube 1 and one drop of the water sample in to tube 2, then swirl the both tubes, and wait for about 10 minutes.
4. After 10 minutes, swirl the both tubes again and evaluate the result.

Color in the tube	Result
The blue color in the sample tube < Nitrate standard D tube.	NO ₃ content < 10 ppm.
Intensive blue color in the sample tube or the blue color in the sample tube ≥ Nitrate standard D tube.	NO ₃ content ≥ 10 ppm. (exceeded the Maximum level of 10 ppm., established by US-EPA), then confirmed by lab.

Testing of nitrate in the cooked cure meat

1. Blend 1 g. of the sample with 100 ml. of water, pour the sample solution in to the sample bottle about 1/2 of the bottle.
2. Add each 20 drops of Nitrate test reagent in to the 2 tubes, tube 1 for Nitrate standard B and tube 2 for sample.
3. Put one drop of Nitrate standard B in to the tube 1 and one drop of the sample in to tube 2, then swirl the both tubes, and wait for about 10 minutes.
4. After 10 minutes, swirl the both tubes again and evaluate the result.

Color in the tube	Result
The blue color in the sample tube < Nitrate standard B tube.	NO ₃ content < 500 mg./kg.
The blue color in the sample tube ≥ Nitrate standard B tube.	NO ₃ content ≥ 500 mg./kg. (exceeded the Maximum level of 500 mg./kg., established by the Thai Ministry of Public Health Regulation), then confirmed by lab.

Testing of nitrate in Vegetables and Fruits

Note: Because of a great variation of nitrate contents in vegetables and fruits (< 25 to > 4,000 mg./kg.), therefore the dilution between the amount of sample (1 g.) and the volume of water used (ml.) could be considered by the tester or by the recommendation in the table below (there is very easy after the tester got an experience). In general, the test can be performed in to 2 steps.

Step 1: Screening for searching the level of nitrate contents.

1. Blend 1 g. of vegetables or fruits with ml. of water (see the recommendation in the table below), pour the sample solution in to the sample bottle about 1/2 of the bottle.
2. Add each 20 drops of Nitrate test reagent in to the 2 tubes, tube 1 for Nitrate standard D and tube 2 for sample.
3. Put one drop of Nitrate standard D in to the tube 1 and one drop of the sample in to tube 2, then swirl the both tubes, and wait for about 10 minutes.
4. After 10 minutes, swirl the both tubes again and evaluate the result.

Color in the tube	Result
The blue color in the sample tube < Nitrate standard D tube.	Continue Step 2
Intensive blue color in the sample tube occurred or the blue color in the sample tube ≥ Nitrate standard D tube.	Repeat 2 of Step1 and change the higher volume of water used until the blue color in the sample tube < Nitrate standard D tube. For example, if blended 1 g. of sample with 100 ml. of water, after testing the blue color in the sample tube ≥ Nitrate standard D tube, therefore dilute 1 ml. of this sample silution with 1 ml. / 2 ml. / 3 ml... of water, then the total volume of the sample = 1 gram : 100 ml. × 2(1+ 1), 100 ml. × 3(1+2), 100 ml. × 4(1+3)... = 200 ml., 300 ml., 400 ml.... after that continue Step 2

Step 2: Comparing the nitrate contents with the nitrate standard.

1. Add each 20 drops of Nitrate test reagent in to the 5 tubes, tube 1 for Nitrate standard A tube 2 for Nitrate standard B tube 3 for Nitrate standard C tube 4 for Nitrate standard D tube 5 for sample.
2. Put each one drop of Nitrate standard A, B, C and D in to tube 1, 2, 3 and 4 respectively and one drop of the sample in to tube 5, then swirl the all tubes, and wait for about 10 minutes.
3. After 10 minutes, swirl the all tubes again and then compare the blue color in the sample tube with the standard tubes.
4. Estimate the amount of nitrate (in mg./kg.) in the sample by the table below.

Caution

- Nitrate test reagent is rather a strong acid, when after finishing the test, the tube contained reagent should be diluted with large amount of water before discarded.
- Wear the hand gloves during testing.
- Avoid contact the Nitrate test reagent with skin, eyes and clothing, If contact, wash thoroughly with large amount of water, and in the case of eye contacted, should go to see the doctor after thoroughly washing with large amount of clean water.
- Keep Nitrate test reagent out of children reach.
- Store Nitrate test reagent, Nitrate standard A, B, C and D in the refrigerator or in the cool dark place, the shelf life within 6 months.

Table : show the various amounts of nitrate in mg./kg.

Sample	1 g. of sample : volume of water in ml.	Standard A mg./kg.	Standard B mg./kg.	Standard C mg./kg.	Standard D mg./kg.	Note
Drinking water	-	3	5	7	10	Intensive blue color in the sample tube or the blue color in the sample tube \geq Nitrate standard D tube = exceeded the maximum level of 10 mg. / kg. established by US-EPA,
Cooked cure meat	1 g. sample : 100 ml.	300	500	700	1,000	The blue color in the sample tube \geq Nitrate standard B tube = exceeded the maximum level of 500 mg. / kg. established by the Thai ministry of public health regulation.
Vegetables & Fruits: Tomatoes, Pineapple, Other fruits Onion Brussels sprouts, Cauliflowers, Carrots Swedes, Potatoes, Celery	1 g. sample : 5 ml.	15	25	35	50	In the case of pineapple, blend 1 g. of sample with 5 ml. of water after forming the color, the blue color of the sample should be less than standard B (the Thai acceptable level of nitrate in pineapple fruit should not exceed 25 mg./kg.)
	1 g. sample : 10 ml.	30	50	70	100	
	1 g. sample : 20 ml.	60	100	140	200	
	1 g. sample : 50 ml.	150	250	350	500	
	1 g. sample : 100 ml.	300	500	700	1,000	
Leafy vegetables: Cabbages, Chinese white Cabbages, Kwangtung(Chinese Kale) , Kale, Moring Glory, Beet root, Spinach, Lettuce	1 g. sample : 500 ml.	1,500	2,500	3,500	5,000	The blue color in the sample tube (Spinach) \geq Nitrate standard B tube = exceeded the maximum level of 2,500 mg./kg. established by the EC Regulation No. 194/97. The blue color in the sample tube (Lettuce) \geq Nitrate standard C tube = exceeded the maximum level of 3,500 mg./kg. established by the EC Regulation No. 194/97.
	1 g. sample : 1,000 ml.	3,000	5,000	7,000	10,000	