NLN Vitamins (100X) VP024

Composition :

Ingredients	milligrams/litre
myo - Inositol	100.00
Thiamine hydrochloride	0.50
Pyridoxine hydrochloride	0.50
Nicotinic acid (Free acid)	5.00
Folic acid	0.50
Biotin	0.05
Glycine (Free base)	2.00
L - Glutamine	800.00
L - Serine	100.00
Glutathione	30.00
TOTAL gm/litre	**1.04**

Directions :

Suspend 0.11 grams of dehydrated vitamins powder# in 600ml of distilled water. Apply constant gentle stirring to the solution till the powder dissolves completely. Add desired heat stable supplements prior to autoclaving. Adjust the medium to the desired pH using 1N HCl/NaOH. Make up the final volume to 1000ml with distilled water. Sterilize the medium by autoclaving at 15 lbs or 121ºC for 15 minutes. Cool the autoclaved medium to 45ºC before adding the filter sterilized heat labile supplements. Dispense the desired amount of medium aseptically in sterile culture vessels.

Weight after vacuum drying to remove all water

Principle and Interpretation :

NLN vitamins (100X) powder is ready to use mixture of vitamins and amino acids which is sufficient to prepare 100 litres of medium from content of one vial. The vial contains 103.86 gm of powdered vitamin mixture.

Quality Control :

Appearance	: White to off-white, homogeneous, free flowing powder.
Solubility	: 103.86 gm/litre soluble in distilled water.
Colour and Clarity	: Colourless to light yellow, clear solution.
pH at 25°C	: 3.7 ±0.5 of 10.386% w/v dehydrated powdered vitamins mixture.

Cultural Response :

Cultural condition :

- · Incubation period : 5 weeks
- · Relative humidity : 60% ± 2%
- · Temperature : 22°C ± 2°C
- · Photoperiod (D:N) in hours : 16:8

Cell Line	Type of Culture	Results
Musa species	Shoot culture	No structural deformity observed No necrotic tissues, Actively growing shoots, No toxicity to shoots
Daucus species	Callus culture	No necrotic tissues, Actively growing callus, No toxicity to callus

[The medium is prepared as per direction. The growth promoting activity of this vitamin mixture is evaluated using two plant species viz. *Musa* species and *Daucus* species through three passages. Plant growth hormones (e.g. 2,4-D, NAA, Kinetin and 6-BAP) are added in suitable combinations and concentrations.]

Storage and shelf life :

Powdered vitamin mixtures are very hygroscopic and must be protected from atmospheric moisture. It is advisable to use the entire contents of vial immediately after opening. In case of unused powder should be stored in desiccator and refrigerated at 2-8ºC. Use before the expiry date.

Reference :

1. Lichter R., Z. Pflanzenphysiol., (1981), 103, 229 - 237
2. Lichter R., Z. Pflanzenphysiol., (1982), 105, 427 - 434