



FRUCTOSE FERMENTATION VAT BIO (natural) INDIGO

This is a simple alternative bio vat for Indigo dyeing based on traditional dye vats from Morocco and India. Instead of using chemical reduction agents and alkali, this vat uses the reaction which takes place between Lime (Calcium Hydroxide) and Fructose[Sugar] to reduce the dyebath which removes the Oxygen and puts the Indigo into an environment where it is able to bond with the fibre. To begin you will be making a stock solution – use a heatproof glass jar so you can see the reaction taking place.

The natural dye world is not perfect – so you need to be patient and learn from your mistakes and failures. You need to respect the process and the history and expertise that has gone into giving you a successful result.

INGREDIENTS FOR 1KG FABRIC

Light to medium shade	
Bio Indigo	25gm
Lime	50gm
Fructose Crystals	75gm
Medium to strong Shade	
Bio Indigo	50gm
Lime	100gm
Fructose Crystals	150gm



MAKING A STOCK SOLUTION

Add your Indigo powder to a 2ltr container. Paste the Indigo with some warm water then add 500mls of hot water & stir well. Add the Fructose Crystals and stir again. Add the Lime and gently stir to make sure it thoroughly mixed into the solution. Fill the jar with extra hot water. Initially the solution will be a dull cloudy Yellow green. Keeping it warm will help the vatting out process so sit it in some hot water. Stir every 15 minutes for 45 minutes then allow it to sit for the last 15 minutes undisturbed. Unlike a chemical vat which goes clear, the Fructose Vat will stay cloudy and will turn a yellowish green or sometimes brown. You'll see some sludge in the bottom of the jar – this is normal.

DYEING YOUR FABRIC

- * Fill the dye pot (stainless steel, plastic or glass) with hot water.
- * Add the entire stock solution (including the sludge) to the dyebath and stir gently.
- * The dyebath will gradually turn yellow green. [Allow at least 30mins]
- * You should also see a coppery bronze layer develop on top of the dyebath [the flower]. This means the dyebath is ready to use.
- * Rinse your fabric or fibre in warm water and completely submerge it in the dyebath.
- * Leave it there for up to 5 minutes then remove it and gently squeeze out the excess dye solution into a second container (this can be returned to the dyebath when you've finished)

The fibre will gradually oxidise and turn from dull green to indigo blue.

- * Leave it for 30 mins to completely oxidise then return it to the dyebath for another 5 mins.

Repeat this process until you have the depth of colour you are after. You will lose some of the colour in the rinsing process so don't be afraid to go quite dark. Remove from the dyebath, oxidise and rinse well. Air dry

REPLENISHING & STORING THE DYEBATH:

If the dye bath goes back to being dull blue, you will need to replenish it with a tablespoon of Fructose. Before doing this, heat the dyebath back up to 50 C. If it doesn't go back to being yellow green, add the same amount of Lime. Stir well and wait for 30mins. You can also make another stock solution and add this to the dyebath. For reuse, store in a covered container. This will keep at least 6 months but may need to be reheated & need the addition of extra Fructose and Lime.
