Ingredients used in mixtures
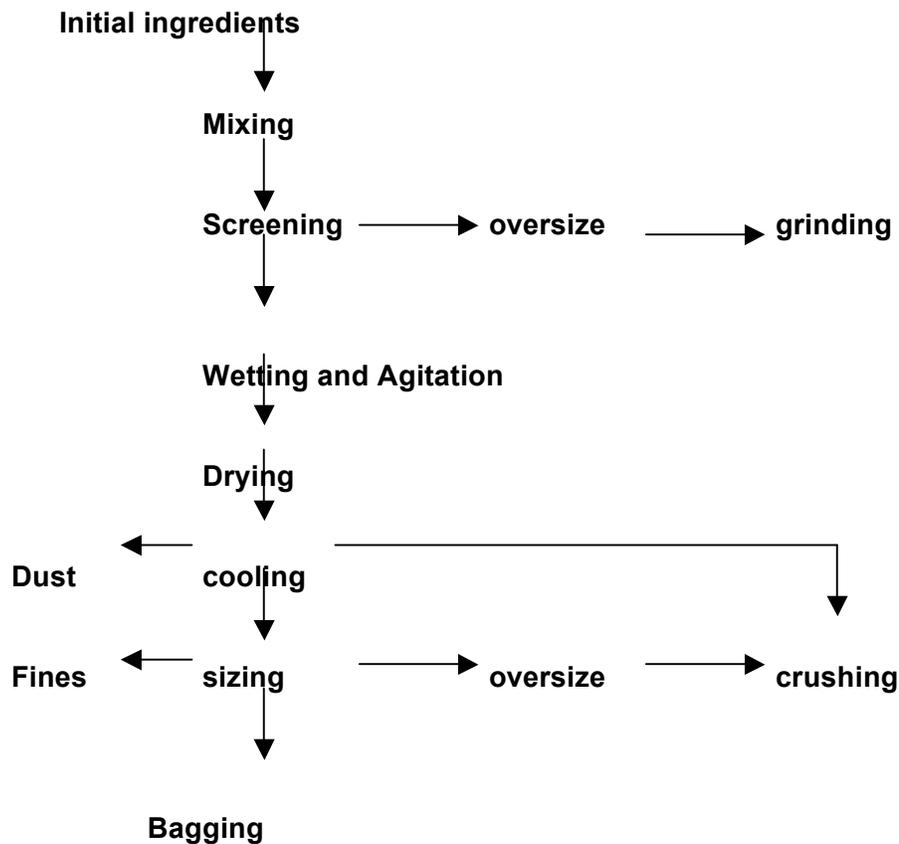
Different types of materials are used for the manufacture and they can be roughly classified according to the main functions they serve in the fertilizer mixture.

(i)   Supplier of plant nutrients

Various sources supplying the plant nutrients used according to the requirement and availability of the raw materials. The selection of the different materials will be based mainly on the prices of the various fertilizers.

Initial ingredients

↓

Mixing

↓

Screening ⟶ **oversize** ⟶ **grinding**

↓

Wetting and Agitation

↓

Drying

↓

Dust ← **cooling**

↓

Fines ← **sizing** ⟶ **oversize** ⟶ **crushing**

↓

Bagging

(ii)   Conditioners

To avoid caking up and other bad physical changes during or after mixing, some materials are added to have a better physical condition. Usually low – grade organic materials are added to reduce the caking up property, tobacco stem, groundnut hull; paddy husk and peat are commonly used as conditioners. A maximum of 50kg/ tonne is used as conditioner.

(iii)   Neutralizer

If acidic fertilizer likes $(NH_4)_2SO_4$, NH_4NO_3 and urea are used, the mixture may be acidic or the acidity may be formed due to the interaction between the various fertilizers used. To neutralize this acidity a basic material like dolomitic limestone is added. The material is designated as neutralizers of residual acidity in the fertilizer mixture.

(iv)   Filler

A filler is a 'make –weight' material added to a fertilizer mixture. It is added to make up the difference between the weight of the added fertilizer required to supply the plant nutrients and the desired quantity of fertilizer mixture usually, the filler are inert materials like sand and sawdust which are commonly used. This must be usually less than 50 kg per tonne of mixture.

Unit value

The unit value of a fertilizer or manure is the cost of that quantity of material capable of supplying one per cent of the plant food ingredient in one tonne of the material. The cost per unit is arrived at by dividing the cost per tonne by the percentage of nutrient contained in it. For example, if the cost of a tonne of ammonium sulphate is Rs.300/- then the unit value is 300/20 = Rs.15/-. From the unit value it is possible to evaluate the relative value of any fertilizer or mixture.