

## OIL EXTRACTION



**Production capacity/annum**

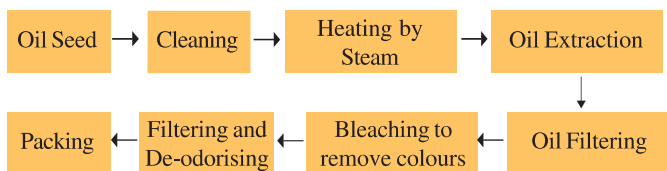
3000 M.T.

### **Production process**

The seed is first cleaned to remove dust and immature grain. The cleaned seed is then heated with direct and indirect steam in Steam Kettles fitted above expellers and moisture content in feed material is maintained less than 10%. The hot material is now passed through three oil expellers installed in series, for three pressings to extract the maximum oil. In the first pressing oil in feed stock is reduced from 40% to 20%; and in fourth pressing only 8% oil will be left in the cake. For cottonseed, only two pressings are required. The oil recovered from expellers contains lot of solid particles which are separated with the help of filter press.

The filtered oil is treated with caustic to neutralise the free fatty acids. Soap stock is separated by gravity settling method. To remove the colour pigments neutral oil is bleached under high temperature and vacuum in the presence of catalyst. The bleached oil is filtered to remove the spent catalyst and deodorised under high temperature and absolute vacuum. The neutralised, bleached, deodorised oil is cooled under vacuum before it is stored in bulk storage tanks for further filling and packing to desired size.

### **Process flow chart**



### Machinery & equipment required

- Bucket Elevators
- Seed Cleaner
- Oil Expeller
- Oil Settling Tank
- Oil Transfer Pump
- Filter Press
- Oil Collection Tank
- Filling machine
- Steam Boiler

### Raw material/consumables required

- Oil Seeds
- Caustic Soda
- Bleaching Agent
- Phosphoric Acid

### Utilities required

Power required	:	40 KW
Steam required	:	500 kg Steam per hour at 7 kg/sq.cm

### Manpower required

Manager	:	1 No.
Skilled Worker	:	2 Nos.
Unskilled	:	6 Nos.

### Area required

Total Area	:	750 Sq. Mtr.
Covered Area	:	600 Sq. Mtr.

### Investment required

Machinery & Equipment	: }	₹ 237.15 Lakhs
Working Capital for 3 Months (Raw material, utilities & salary)		

