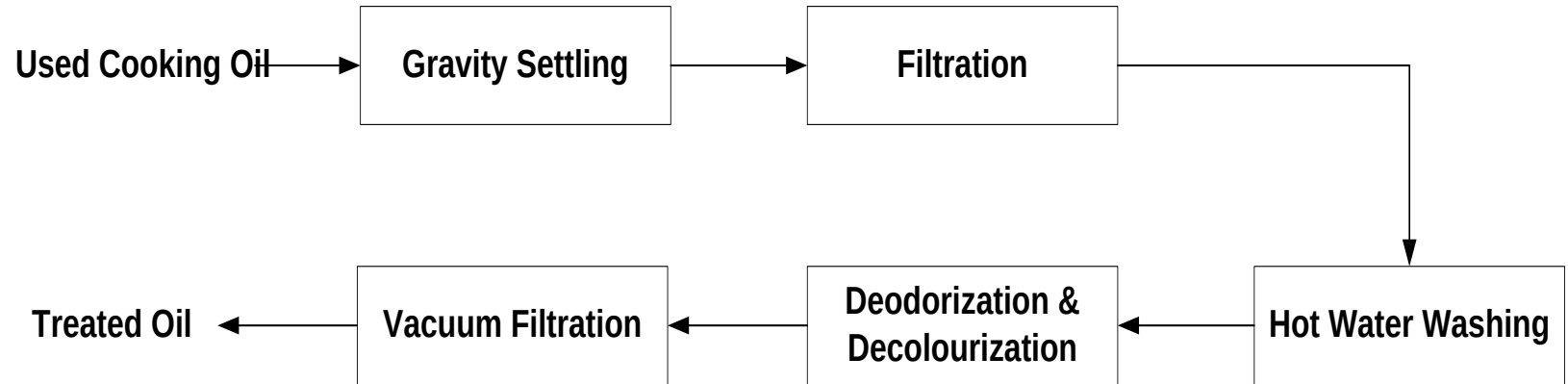


Recycling of Used Cooking Oil to Make Soap

Introduction

- Soap making generally involves the reaction of a fatty acid with an alkali to produce soap & glycerol.
- The quality of the soap produced depends on the cleaning and quality of the oil.
- NaOH is used to make hard soap while KOH is used to make liquid soap.
- Other additives such as, antioxidants, colors and fragrance can be added to improve soap quality.

Pretreatment of cooking oil



Pretreatment of cooking oil

Settling

- UCO is allowed to settle using gravity to remove solids in the oil. Then, the top part of liquid UCO is filtered.

Hot water washing

- Hot water (95 °C) is mixed with the filtered UCO to remove water soluble impurities.

Clay Treatment

- 10% of Clay is mixed with UCO (about 70 °C) for 25 minutes to remove color and odor.

Vacuum Filtration

- Use vacuum filtration to separate the clean treated oil and the clay.

Hot Water Washing



Vacuum Filtration



Steps For Making Bar Soap

Treated oil
55 °C

NaOH
solution 55 °C

Mixing and
saponification
55 °C for 25 minutes

Soap Tracing

Adding fragrance and
colour

Pouring into moulds

Curing for two weeks

Bar Soap



Steps For Making Liquid Soap

Treated oil
55 °C

KOH solution
55 °C

Mixing and
saponification
95 °C for 50 minutes

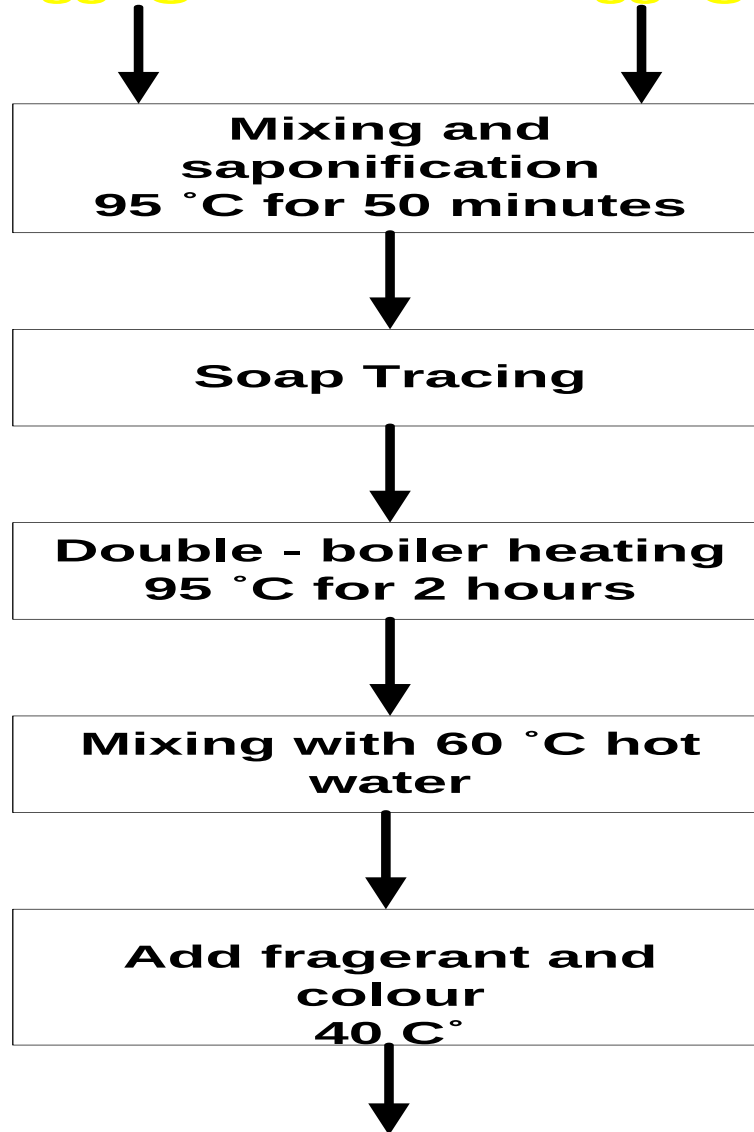
Soap Tracing

Double - boiler heating
95 °C for 2 hours

Mixing with 60 °C hot
water

Add fragerant and
colour
40 C°

Liquid Soap



Photos for Liquid Soap Making



Adding Treated UCO at 55 °C



Adding KOH at 55 °C

Photos for Liquid Soap Making



Soap becomes tracing



Becoming thick paste

Photos for Liquid Soap Making



End of Saponification



Adding Hot Water



Liquid Soap

Solid Soap Product



Liquid Soap Product



THE END