TahinaPlus – Gumus Machine Production Line





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Preperation & Hulling

Hulling Machine

After the seeds are transported via a screw auger into a hulling machine, rotating at 75 RPM.
The hulling machine removes the outer shell using friction over a 17minute process





Washing & Drying



- The hulled seeds enter a saltwater brine solution to separate the hulls from the kernels.
- A pocket elevator moves the seeds from the brine solution into fresh water for rinsing.
 - The seeds sink in fresh water, separating them from remaining husks, mimicking the traditional method.

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Grinding & Final Processing

Final Product

- Texture: Should be smooth and creamy, free of grittiness or lumps.
- Color: Light beige or golden in appearance. Over-roasting results in darker tahini, which may indicate bitterness.
- Flavor Profile: Nutty, slightly earthy, with a balanced, mild sesame taste.
 Over-roasting causes bitterness and impacts flavor acceptability.



Challenges

1. Hygiene & Handling Challenges

Soaking Pool: Manual seed movement with shovels \rightarrow risk of contamination. Washing: Partial automation \rightarrow potential for unclean seeds if not properly rinsed.

2. Roasting & Temperature Control Challenges

Roasting Machine: Uses natural gas fire with manual control \rightarrow over-roasting risk. Heat Distribution: Double-jacket steam kettle \rightarrow uneven cooking, outer burning. Operator Judgment: Temperature assessed visually \rightarrow inconsistent batches.

3. Grinding & Quality Control Issues

Grinding Consistency: Manual adjustments \rightarrow gritty texture or oil separation. Overheated Grinding: Heat generated \rightarrow degrades sesame oil quality. High Energy Consumption: Roasting & grinding require significant power.