

# 04

## Comprehensive Utilization of Sweet Potato by-products





- Approximately **10 to 20 tonnes of waste water** and **4.5 to 5.0 tonnes of fresh residues** are generated from 1 tonne of starch production.
- The production of sweet potato leaves was equivalent to that of roots.
- Most waste water and leaves is discharged directly;
- About **20%** of the residues are used as low-value animal feed; about **80%** of the residues are disposed;
- A major contributor to serious resource waste and environmental pollution.



## ➤ Processing technology of sweet potato protein



Waste water



Concentration



Adjusting pH to 4 with HCl and stirring extraction



Centrifugation and collecting precipitate



Native sweet potato protein



Spray drying



Ultrafiltration



Adjusting pH to 8 with NaOH

## Processing technology of native sweet potato protein





Waste water



Concentration



Preheating



Heat preservation



Steam ejector

Processing technology of denatured sweet potato protein



Protein



Spray drying



Concentration



Floculation



Protein



Airflow drying



Wet protein



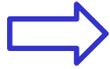
Plate-frame pressure filtration



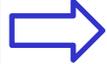
## ➤ Processing technology of sweet potato dietary fiber



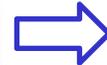
Sweet potato residues



Enzyme hydrolysis



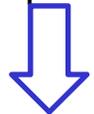
Turbine centrifuging



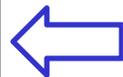
Three-column centrifuging



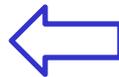
Plate-frame pressure filtration



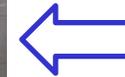
Dietary fiber



Superfine grinding



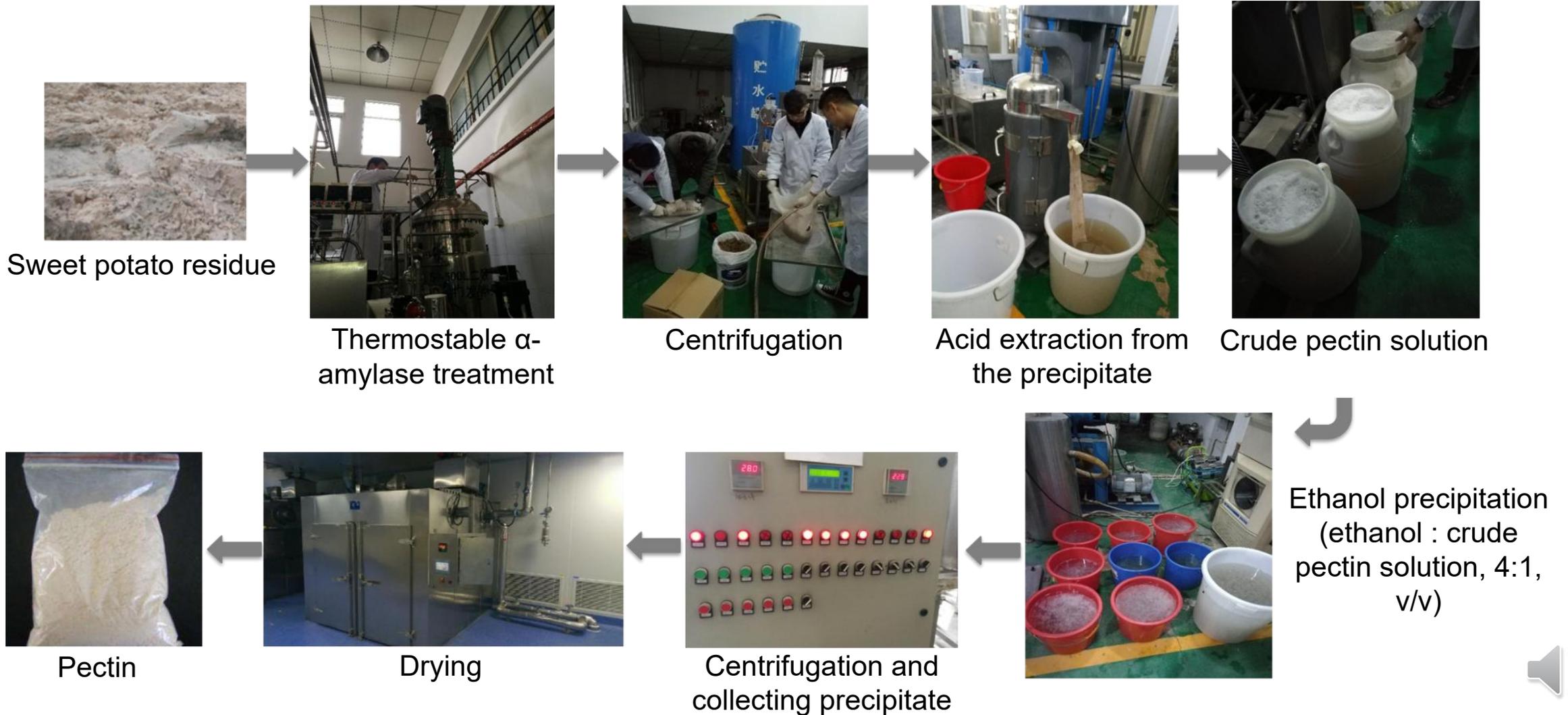
Smashing



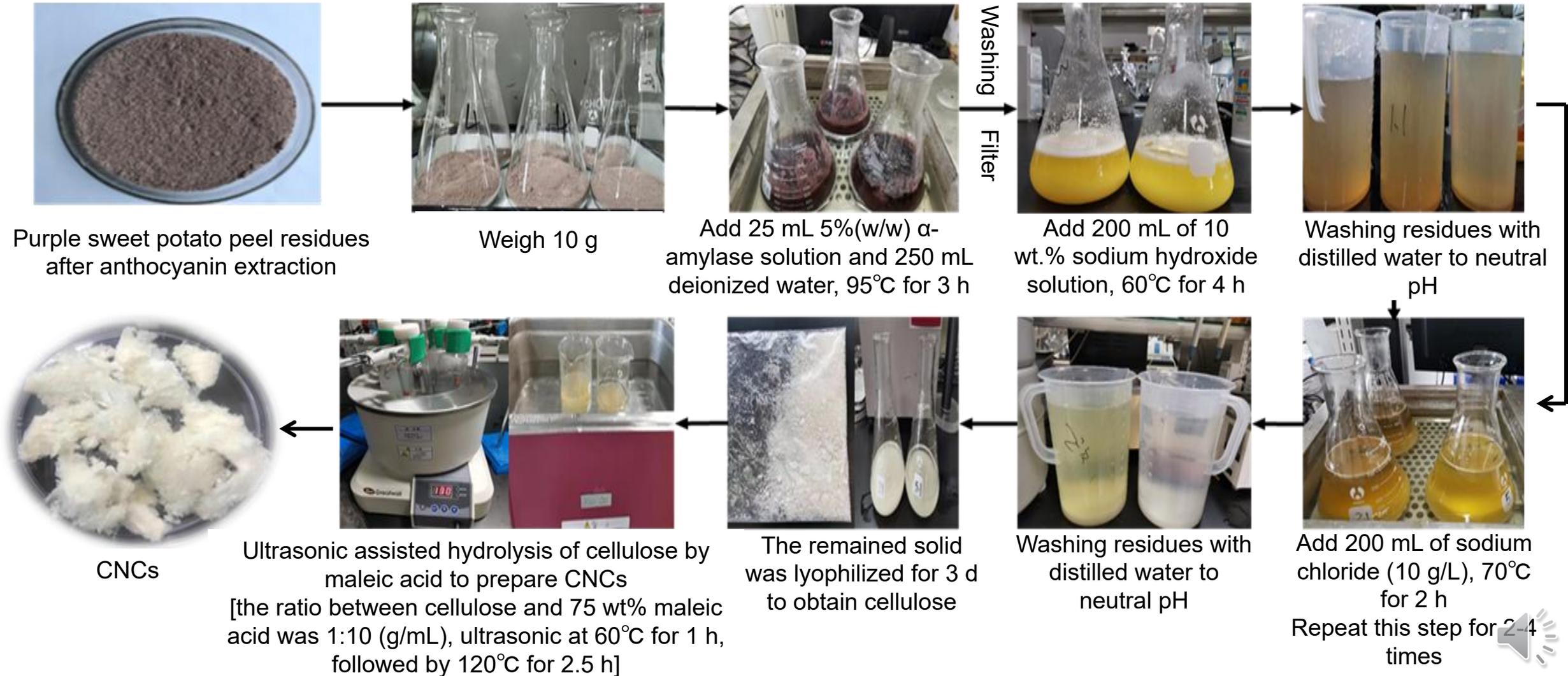
Drying



## ➤ Processing technology of sweet potato pectin



## ➤ Processing technology of cellulose nanocrystals from sweet potato residues



## ➤ Processing technology of sweet potato leaf powder



Fresh sweet potato leaves



Washing



Cutting



Blanching with hot water (80-100 °C, 1-3 min ) or steaming (90-100 °C, 2-3 min)



Sweet potato leaf powder



Grinding



Drying



Dewatering



## ➤ Processing technology of sweet potato leaf polyphenols



Fresh sweet potato leaves



Washing



Cutting



Sweet potato leaf polyphenols



Drying



Extraction and purification



# Thank You



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