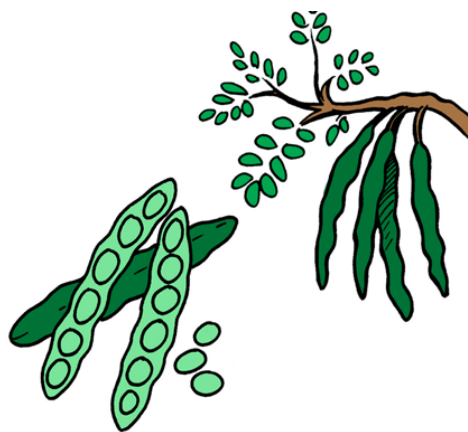


Natural Coagulants

Source Protection	Safe Transportation	Sedimentation	Filtration	Disinfection	Safe Storage
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What is it?

Coagulants are substances added to water to cause particles to clump together and settle (sediment) more quickly. Some plants can be used as coagulants. Examples of natural coagulants include: extracts from *Strychnos potatorum* (the clearing nut or nirmali tree), the seeds of *Moringa oleifera*, and the flesh of prickly pear cactus.



Performance

Microbiological Effectiveness:

Parameter	Effectiveness
Bacteria	Somewhat Effective (>80%)
Viruses	No independent tests
Protozoa	Somewhat Effective*
Helminths	Somewhat Effective*

*Assumption based on data for natural settling

Other Parameters

Under certain conditions, some natural coagulants effectively remove turbidity, iron, and/or manganese.

Source Water Requirements

No specific limits.

Capacity

Volume treated depends on container size. Treatment dose and time depends on source water turbidity and the type of coagulant. Treatment with moringa usually takes four hours.

Lifespan

Varies; dried beans and seeds can be stored for a long time in a dry location. Prickly pear cactus needs to be used before the sap dries.

Ease of Use & Acceptability

Operation & Maintenance

Users add a prepared dose of coagulant to water. They stir the water for a few minutes, and then allow particles to clump and settle. Settled clumps are removed by filtering or gently pouring off the water. Most natural coagulants need to be prepared from the raw materials (for example, by peeling prickly pear cactus or crushing and drying moringa seeds).

Repair & Replacement

Users must pick or purchase new supplies regularly.

User Considerations & Preferences

Little research has been done to optimize and standardize the use of natural coagulants. Finding the correct plants and preparing them is required before treatment. Preparation, use, and dose vary depending on source water and type of coagulant. Natural coagulants leave organic matter in water and may make subsequent treatment with chlorine less effective. Some users say that natural coagulants affect the taste of water.

Feasibility

Availability

Different types of natural coagulants are available in different regions.

Cost

Varies; generally inexpensive.

Size & Weight

Variable.

More Information

Details and references: www.hwts.info/products-technologies/cc936ef7/natural-coagulants

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