



Ways of Increasing the Germination Percentage in Coriander

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Coriander (*Coriandrum sativum* L.) is an annual spice herb; coriander is commonly known as Dhania or Cilantro (particularly in America) that belongs to the family Umbelliferae or Apiaceae. Coriander (*Coriandrum sativum* L.) is a cross pollinated crop. The native place of *Coriandrum sativum* Mediterranean and Western Asian regions. In the group of seed spices coriander plays a major role. Coriander cultivated worldwide, some coriander growing countries are India, Morocco, Romania, France, Spain, Italy, Holland, Myanmar, Pakistan, Turkey, Mexico and Argentina. In the world, India is the biggest producer, consumer and exporter of coriander. In India, coriander is cultivated in the state of Madhya Pradesh, Rajasthan, Gujarat, Tamil Nadu, Karnataka, Orissa and Haryana. The states Rajasthan and Gujarat have emerged as “Seed Spices Bowl” is the principal growing kingdom and contributes about 80 in step with cent of coriander production in India. According to Bureau of Indian Standards, 63 kinds of spices are grown in the country. Mainly, 52 spices are grown in India according to Spices Board, Calicut, and Kerala.

How to Increase the Germination Percentage?

Germination percentage

- Some germination percentage of coriander varies from strain to strain, the average germination percentage of coriander 50-70%.
- Methods and practices applying to increase the germination percentage, these methods and practices are.....

1. Seed

Use coriander seed for sowing should not be aged, aged seed having low germination percentage.

Avoid the poor-quality seed, the quality of sowing seed should be good means the seed not infested by insect pest.

2. Hydropriming and Osmopriming

Seed soaking in water prior to sowing known as hydropriming. A form of hydropriming in which seed soaked in a osmotic solution of polyethylene glycol or similar known as osmopriming. Due to low water capability of osmotic solutions, water enters seed slowly which allows gradual seed imbibition and activation of early phases of germination. The both practices increase the 10-15% germination percentage.

3. Spilt

It is most common method to increase the germination. Coriander seed when split it then increase the germination rate since it scarified the seed.

4. Growth promoter

(A) **Gibberellic acid:** Treatment with high concentrations of GA₃ is effective in overcoming dormancy and causing rapid germination of seed. Gibberellic acid (GA₃) is a naturally occurring plant growth regulator. Presoaking seed in gibberellic acid will often cause rapid germination and also enhances germination percentage.

Amount of 0.1-10 mg GA₃ dissolve in per liter water, then seed soaked into the solution

(B) **Cytokinin:** cytokinin also enhance the germination in spices, two cytokinin are there, those enhance the germination percentage in coriander.

(a) **Kinetin(kin):** Kinetin also significantly improved seed germination, 100 mg kinetin dissolve in water, then seeds soaked into the water

(b) **Benzyl adenine:** 6-Benzyladenine, also called 6-benzylaminopurine, it is a synthetic cytokinin that stimulates cell division in plants. When cell division stimulate in the seed then seed increase the ability to germinate. 10-100 mg benzyl adenine dissolve in water, then after seed are soaked into solution.

5. Nitrogenous compound:

Some nitrogenous compounds are known to stimulate the germination of seeds such as nitrate, nitrite and thiourea,. In seed spices mainly uses the nitrogenous compound is potassium nitrate (KNO₃).

Potassium nitrate (KNO₃) often enhances the action of growth regulators such as gibberellin, cytokinin and ethylene.

Amount of potassium nitrate 2-6 gm per liter dissolve in water, then well shake the solution and after well shaking, seed pre-soaked into the solution. Always be carefully used the potassium nitrate because its higher concentration decreases the germination percentage.

6. NaEDTA (Sodium Ethylene Diamine Tetra Acetic acid):

When NaEDTA applying alone that time this is ineffective. The effective combination of GA₃, NaEDTA with benzyl adenine helpful for enhance the germination of coriander.

Seeds are soaked in NaEDTA solutions and shaken on orbital shaker for two days. Seeds were then eliminated, placed on a filter paper moistened with BA or distilled water as a control. For combined exposure of GA₃ and BA, seeds were placed on a filter paper moistened with BA plus GA₃ or distilled water as control.