



## Ancient Method of No-till Agriculture: Seed Balls

(\*M.Ananthi<sup>1</sup> and S.Kavitha<sup>2</sup>)

<sup>1</sup>Teaching Assistant, Directorate of Planning and Monitoring, Tamil Nadu Agricultural University, Coimbatore

<sup>2</sup>Assistant Professor, Department of Seed Science and Technology, Tamil Nadu Agricultural University, Coimbatore

\* [ananthiagri87@gmail.com](mailto:ananthiagri87@gmail.com)

The method of capping the seeds with compost and soil and bringing it into a ball-like shape is called seed balls. It would be a great mixture that includes everything a seed needs to grow in a natural environment. The balls are uniquely made to be dispersed off in a bit of a controlled manner and give life to new plants. The seeds that have been wrapped in soil matter and then dried. The soil matter is often a mixture of clay and compost. The seed is, therefore, pre-planted and can be sown by depositing the seed ball anywhere as long as the species can survive there. The wrapping mixture keeps the seed safe until it can properly germinate.

Planting seed bombs are a standard method of restoring damaged lands and facilitating restoration. Scattering the seed balls is a cost-effective and low maintenance way to plant native plants. And it is important to note that the land is protected from reaping. That's all the rest of the work will be done by the sun and the rain.

Seed balls are one of the easiest and sustainable ways of cultivating plants to win a manner that avails a larger window of time until the sowing window comes. Seed balls are also the best and most convenient way of dispersing seeds for guerrilla gardeners as well as those with achy backs.

With seed balls, you can propagate plants and trees from seeds, without the need for opening the soil with cultivation tools like a plough. As such, seed balls became an important aspect of natural farming and conservation enterprises all over the world. The practice of seed balls was very effective in growing rice, barley, vegetables and fruits. Seed balls have been employed to establish perennial pastures on marginal degraded highlands where the use of seed-drills and rippers is impossible because of steep slopes, existing woodlands, shallow soils/exposed bedrock, and general rockiness of the area.

### Why Seed Balls Important?

- Seed balls are important because it is the easiest way to plant native plants, flowers and grasses.
- The planting method requires time and patient. In seed balls, regardless of age, anyone can plant anything without much effort.
- Additionally, the clay and humus in ball prevents the seeds from drying out in the sun, getting eaten by predators like rats and birds, or from blowing away.

- We don't need to worry about areas where there is no way for watering. When enough rain has seeped into the clay, the seeds will sprout with the help of its mixtures.

## How to Make Seed Balls?

### 1. Preparation

Seed balls are made from mixing clay, compost and seeds. They have to be processed and the clay and compost have to be relatively fine-textured, and that the seeds are winnowed, removing casings and hulls. Pulverizing and screening the clay will remove rocks, vegetation and stubborn clod materials. The compost also needs to be relatively sifted. Any compost can do, but the more biologically active the compost, the better and inoculant the seed balls will be.

### 2. Additions

Choose to add other elements, depending on the circumstances and the desired outcome. For instance, you may choose to add compounds found in capsicum, artemia, black pepper, mints and alliums, as they deter insects from opening the balls and eating the seed.

### 3. Ingredients

Need 5 parts pottery clay mix, 2 parts potting soil, 1-2 parts water, and 1-2-part seeds of your choosing. Also need a large tub to mix the ingredients and a large box to dry and store the seed balls

### 4. Directions

First, you will mix the soil, clay, compost and 1- part water thoroughly. Slowly add more water until the mixture is consistent. Next, you will add the seeds. Keep kneading the dough until the seeds are well mixed in. if necessary, add more water. Then, take small bits of the clay mixture and roll into a ball about one inch in diameter. The balls should hold together easily and if they are crumbling, add more water. With the balls rolled, place them in a large box and let them dry for 24-48 hours in a shady place. Then move them into a cardboard box for storage. Never store them in plastic bags. Finally, sow them by either placing them over the area to be planted or toss them one at a time. Do not bury them and neither should you water them.

## How Do Seed Balls Work?

### 1. The dried clay shell

It protects the seed from common predators such as mice, birds and ants, as well as harsh sun. It keeps the seed in protective care until it starts germinating. By then, it will crack and be rendered useless.

### 2. The ball

During germination, the ball itself will contain nutritious minerals or humus, which helps the seed germinate.

### 3. The chili powder or compounds

They have a strong odor that deters predators as the seed ball slowly degrades and the seed continues to sprout.

### 4. The seed

The seed will germinate given the conditions are favorable and is native to the area. When sufficient rain permeates the clay casing, the seed will germinate

### 5. Sowing

When planting trees the conventional way, have to dig holes and source for an already germinated tree seedling, which is about one inch tall. It is a fun experience but it is tedious.

With seed balls, do not need to water, or pit holes for planting them. Need to make them and then scatter them in an open field, and with time, they will germinate and grow into big trees.

### 6. Practice patience

They do not germinate immediately. They require some patience, although it is a highly rewarding project.

### 7. Storing

Do not need to scatter them immediately after they have dried up. If placed in a cool and dry place, seed balls can be stored and be suitable for planted for a couple of years.

### Uses of Seed Balls

- Reforesting an area
- Planting wildflowers
- As a teaching source for kids
- They have additional purposes, especially preservation
- Enriching the landscape

### Facts about Seed Balls

- They are easy to make
- The balls have existed for a very long time
- They are versatile
- They are diverse
- Seed balls get people involved
- Seed balls can be stored for years

The seed ball technique proved to be low cost and can be used to recover vegetation in deforested areas. This technique can overcome biotic and abiotic stresses which hinder seed germination and viability. It can be effectively utilized for better seedling establishment, vigour and survival even in resource-limited conditions. Under non-irrigated condition, seed ball performed better than control. The nutrients in the seed ball medium provided additional nutrients and growth promoting factors for enhancing the establishment and survival rate of the seedlings.

