

Innovative Planting Solutions: Exploring Seed Ball Technology

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SUMMARY

Seed ball technology is an innovative and efficient method for planting vegetable crops. This technique involves encapsulating seeds within small balls made of a mixture of clay and compost. The encapsulation protects the seeds from being eaten by birds or other animals and provides a favorable environment for germination. Its ease of use, protection capabilities, and potential to improve germination rates make it an invaluable technique for gardeners and farmers alike. By adopting this method, we can contribute to more sustainable and efficient agricultural practices, ensuring healthier crops and potentially higher yields.

INTRODUCTION

The grain ball, also known as the earth ball or Nendo Dango, consists of a variety of seeds located inside a mud pack. Ideally, volcanic red pyroclastic mud with various supplements can be incorporated, such as mulch or manure and surrounding coated the seed, in the center of the ball, to create a probiotic. Cotton fiber or paper concentrate is sometimes mixed with soil to enhance firmness, or melted squash is coated to ensure additional soil shine when grown by throwing, or in particularly arid natural environments. Seed bombs are preparative different organic substrates to protect against predators and enhance the seed ball dormancy breaking when a favorable abiotic and biotic environment is available surrounding the seed ball until the seed ball lives in the soil system. Most farmers spend more energy, labor consumption, high expenditure, and more land area to damage the soil profile system, wastage groundwater, and natural breeding. This is an efficient way to cultivate without plow/drilling and labor involvement. This is been used in Table crops, millets, Solanaceae, Cucurbitaceae family and fruits crops. Seed ball planting method was developed by a Japanese farmer and philosopher Masanobu Fukuoka in southern Japan. The technique is considered as a natural method of farming that requires no machines, no chemicals and very little weeding. By using seed balls, lands are cultivated without any preparation of soil. This kind of cultivation is highly useful for re-vegetation of decertified lands, and protects soil from erosion and climate risks such as landslides.



Method of Seed Ball Preparation

- Collect same quantity of both clay and organic soil.
- Sieve the clay and organic soil to get fine particles. Mix the clay and organic soil by adding appropriate amount of water slowly until the mixture begins to stick firmly.
- In harsh environments, cotton fibers or liquefied paper can protect the clay ball.
- The process requires pouring water little by little to mix with soil for better bonding.
- Take a bit of mixture and roll it into balls. Test the ball by throwing it on a flat surface.
- If the ball doesn't break easily, it means it has got good bonding. Insert seeds± 5 seeds per seed ball for vegetables

- Dry the seed balls for one to two days in a shaded area, if properly dry, the seed balls will be protected from external predators such as chickens, birds, rats...

How to Use Seed Balls?

Although seed balls can be planted without extensive soil preparation, loosening the top layer of soil can help the seed balls integrate better with the ground. Use a hoe or rake to lightly till the soil. Scatter the seed balls over the prepared area. Space them according to the recommended planting distance for the specific vegetable. Press them gently on the soil, about 2/3 of the way down. Water the area thoroughly after placing the seed balls. Keep the soil moist but not waterlogged. Regular watering will help the seed balls break down and the seeds to germinate. Use of mulch can also be done.

Vegetable Crops Suited

- Leafy greens (lettuce, spinach, kale)
- Root vegetables (carrots, radishes, beets)
- Herbs (basil, cilantro, parsley)
- Other small-seeded crops (tomatoes, peppers)

Advantages of Seed Balls

- Easy to make
- Improved Germination
- Have existed for a very long time
- Versatile
- Diverse. Used in all types of problematic soils

Disadvantages of Seed Balls

- More seed in a single seed ball
- Not uniform size of seed ball
- Poor germination of seed ball and not uniform germination

CONCLUSION

In any kind of lithosphere or biosphere on the world, seed balls have shown to be incredibly effective in growing forestry, legumes, oil seeds, vegetable and fruit crops, and lawn crops. They are an inexpensive and efficient way to start plants without drilling or plowing. Although they may be utilized anywhere with a rainy season, seed balls are particularly helpful for bringing more green space to waste land locations.

REFERENCES

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