



**Biorun,
Experience Healthy Organic Life**

Nature Biotechnology Company
West 8th St. Goldasht, Karaj – IRAN
Tel: +98 (26) 34 80 66 66-7
Fax: +98 (26) 34 80 45 64

www.biorun.ir



Biorun

Biological Agriculture Product

bioFarm¹



Nitrogen: importance and problems

Nitrogen (N) is a paramount element for plant growth and productivity, as it is a core component of many plant structures such as amino acids, nucleic acid, and chlorophyll. Despite, nitrogen being one of the most abundant elements on earth, nitrogen deficiency is among the most common nutritional problems affecting plants worldwide. This is because the nitrogen from atmosphere cannot be used directly by plants. Several plant growth promoting rhizobacteria (PGPRs) are known to actively contribute to nitrogen fixation beside other beneficial functions such as phytohormone production, phosphate solubilization, iron chlation, suppression of plant pathogenic organisms, and induction of resistance in host plants against plant pathogens and abiotic stresses.

Biofarm

Biofarm is a biological fertilizer formulated based on several nitrogen fixing PGPRs, such as *Azospirillum* and *Pseudomonas* (2×10^7 CFU per mL). It is expected to improve plant growth and yield, and decrease the incidence of soil-borne plant diseases.

Application dose and methods

Biofarm can be used for seed, seedling, or tuber inoculation at the time of sowing or along with irrigation water (top-dressing) in different growth stages of field and greenhouse crops.



Target crop	Application method	How to use
Vegetables & tomato	Seed inoculation	Mix 1 L of biofarm with seeds of 1 ha.
	Seedling inoculation	Add 1-2 L of biofarm with adequate volume of water & put the seedling roots of 1 ha. in the solution for 15 min.
Potato	Tuber inoculation	Spray 5 L of biofarm on 1 ton of tuber.
Cereals (wheat & barley)	Seed inoculation	Mix 1-2 L of biofarm with 100 kg seeds.
Corn and cotton	Seed inoculation	Mix 1 L of biofarm with 30 kg seeds.
Rice	Inoculation of germinated seeds	Mix 1-2 L of biofarm with germinated seeds used for 1 ha.
	Nursery bed inoculation	Add 1-2 L of biofarm with adequate volume of water & use to irrigate seedlings of 1 ha. in nursery bed.
	Seedling inoculation	Add 2 L of biofarm with adequate volume of water & put the seedling roots of 1 ha. in the solution for 15 min.
Canola & sunflower	Seed inoculation	Mix 0.5-1 L of biofarm with seeds of 1 ha.
Various crops	Top-dressing	Mix 3- 4 L of biofarm with adequate volume of water & release uniformly in irrigation water for 1 ha.

Benefits

Contributing towards reduction of the use of chemical N fertilizers in agriculture.

Decreasing the risk of above- and belowground water contamination with nitrates.

Improving soil structure and biodiversity with respect to biological activity of bacteria.

Providing a combination of benefits ranging from nutrient availability to increasing plant defense against abiotic and biotic stressful agents.

