

Research Institute of Irrigated Farming, NAAS

Testing the application of Bio-gel natural adaptogen to Arrate soybean variety with no weed and pest killers used and with soil herbicide used under irrigation

CONCLUSION

1. Bio-gel affects the growth and development of plants extending the vegetation period by 1-3 days. It affects the formation of individual productive elements and the final soybean yield.
2. The best way of using Bio-gel is its application to seeds in combination with the ABM inoculant (USA). In this case the yield of the Arrata soybeans increased by 2.8 cwt/ha.
3. Studies have shown that Bio-gel has a fungicidal effect on soybean plants, which is of great importance for cultivating organic soybeans. In this case soybean resistance to plant pathogens increases.
4. Bio-gel makes it possible to halve the herbicide load on plants. On applying half of the Bazagran herbicide rate in combination with 1% Bio-gel solution, the herbicide effect amounts to 89.4% compared to the full rate of the herbicide applied (91.6%) in the control.
5. The biologically active Bio-gel improves significantly the functioning of the soybean Rhizobial apparatus, which provides the highest green weight of nodules per unit area, while the gains increase 2.5-6.7 times compared to the control.
6. The application of the 1% Bio-gel solution in combination with half fungicide rate brings about an insignificant increase in protein content (by 1.89-2.06%).
7. The research on Bio-gel properties should continue for another year under irrigation conditions and the data obtained should be verified under working conditions.