

Technology for Licensing

CSIR-CSMCRI'S National award-winning *Kappaphycus alvarezii* seaweed-based organic plant bio stimulant for raising agricultural crop productivity

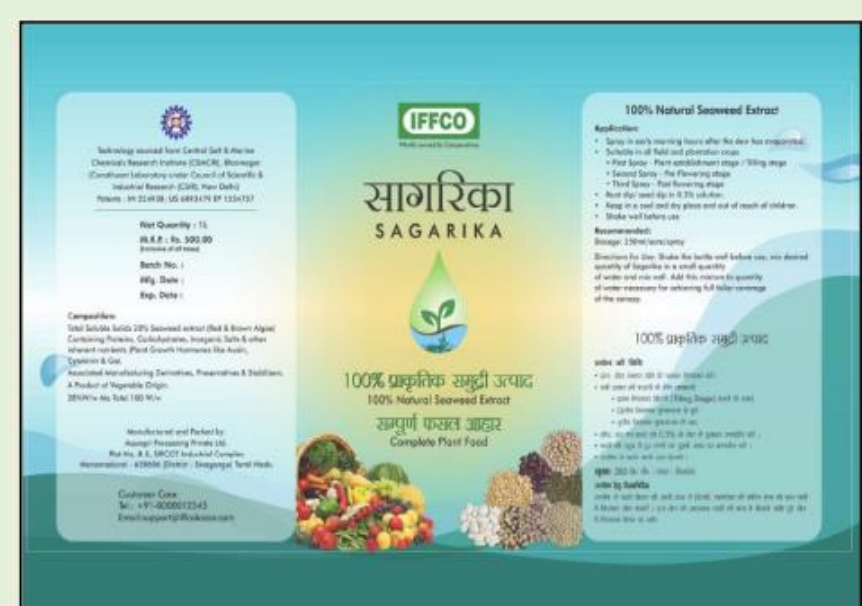
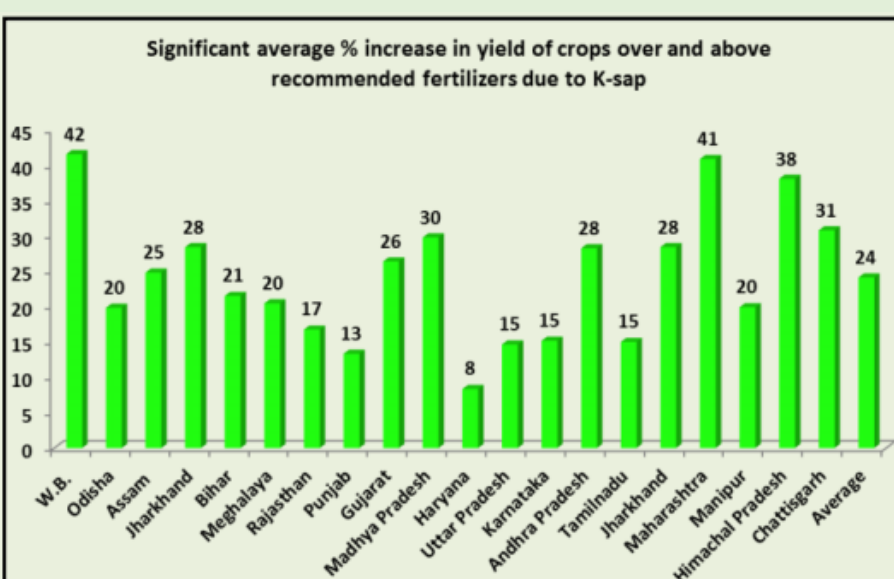
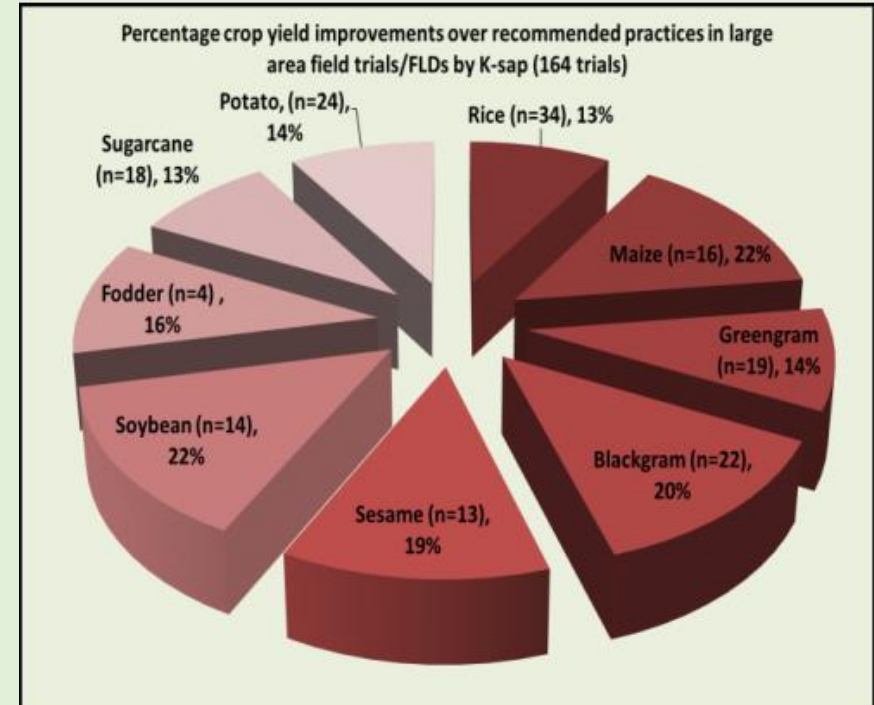
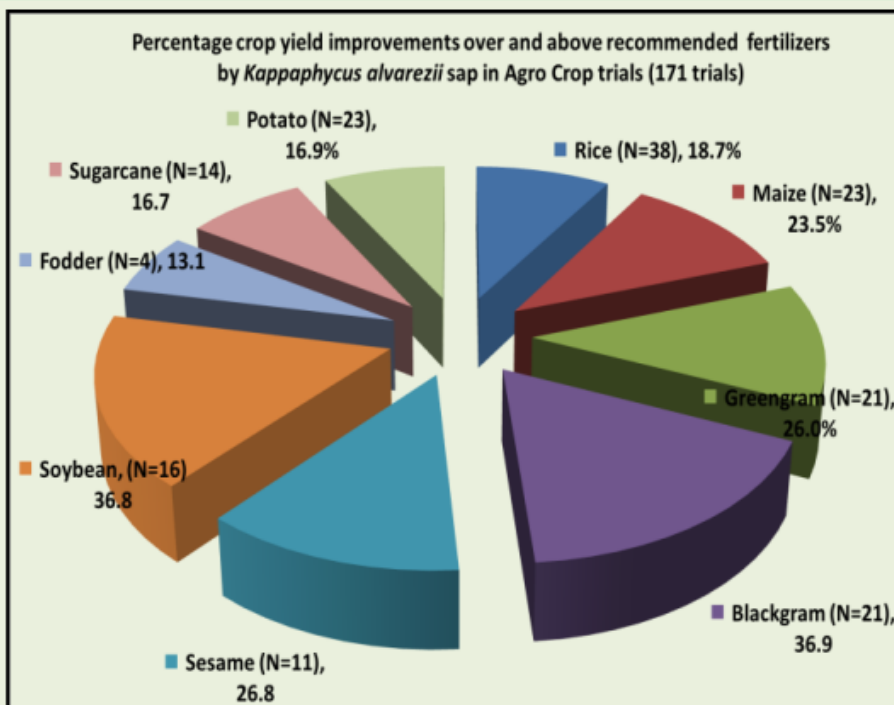


- (US Patent No. 6,893,479) a technology for production of sap of the seaweed, *Kappaphycus alvarezii*, along with a residue that yields kappa carrageenan.
- The Sap produced is used as Biostimulant.
- The usage level 2-15% and increase in crop yield production range from 12 to 35% across crops.
- Preliminary studies at CSIR-CSMCRI showed that the foliar application of sap in dilute form resulted in yield improvement in number of crops.

Highlights

Inexpensive
Yield improvement

Affordable
Effective Biostimulant



The integrated technology has already been commercialized and one of our licensee viz., M/s Aquagri Processing Pvt. Ltd., which has set up processing plants for sap and had been marketing the product. It has tied up with IFFCO to take this affordable product to Indian farmers. The life cycle assessment of *Kappaphycus* sap production revealed a very favourable carbon foot print (118.6 kg CO₂ equivalent per kilo litre) rendering it as a potent green organic biostimulant. The soil microbes in moisture stress conditions was found to be maintained at par with that in normal irrigated conditions when the the *Kappaphycus* sap was applied. CSIR-CSMCRI and APPL jointly received the CSIR National Award for S&T Innovations for the Rural Development for the significant rural impact created by cultivation of red seaweed *Kappaphycus alvarezii* and co-production of bio-nutrients (sap) & carrageenan from fresh seaweed. Biostimulant based on other seaweeds like Sargassum have also been recently developed. Recently, another of our licensee has tied up with KRIBHCO for marketing the products based on our technology.