

Protected Cultivation of Horticultural Crops

Sarita¹, Dr. Parshant Bakshi², Dr. Kiran Kour³ and Bhawana⁴

^{1,2,3,4}*Sher-e-Kashmir University of Agricultural Sciences & Technology, Jammu*
E-mail: ¹*bluebirdmalik@gmail.com*

Abstract—Controlled-environment agriculture or protected cultivation has now extended far beyond the realms of crop irrigation and water management. Protected cultivation, which enables some control of wind velocity, moisture, temperature, mineral nutrients, light intensity, and atmospheric composition, has contributed and will continue to contribute much to a better understanding of growth factor requirements and inputs for improving crop productivity in open fields. Protected cultivation is a unique and specialized form of agriculture. Devices or technologies for protection (windbreaks, irrigation, soil mulches) or structures (greenhouses, tunnels, row covers) may be used with or without heat. The intent is to grow crops where otherwise they could not survive by modifying the natural environment to prolong the harvest period, often with earlier maturity, to increase yields, improve quality, enhance the stability of production, and make commodities available when there is no outdoor production. The primary emphasis is on producing high-value horticultural crops (vegetables, fruit, flowers, woody ornamental, and bedding plants). Protected cultivation ensures better quality of produce, higher productivity, nursery raising and hardening of plants, better insect and disease control and reduced use of pesticides, off-season cultivation and efficient use of resources. Fruit crops covered under protected cultivation includes strawberry, cape gooseberry, pepino, grapes, papaya, banana, pomegranate, guava, citrus, berries etc. The overall objective of protected cultivation is to modify the natural environment by practices or structures to achieve optimal productivity of crops by enhancing yields, improving quality, extending the effective harvest period, and expanding production areas. There are also specific objectives and advantages in selected geographical areas for limiting rainfall and hail damage and reducing high sun radiation by shading. The overall intent is the most effective use of land, water, energy, mineral nutrients, and space, and the climatic resources of sunlight, temperature, relative humidity and atmospheric CO₂.