CLAIMS

1. A horticultural light device, ~~wherein said light device is~~comprising at least one LED and/or quantum dot arranged to emit ~~at least one spectral peak at a wavelength that coincides with increased reflectivity of flowers of pollinating plants, said light device is arranged to emit at least one spectral peak at a wavelength that coincides with increased~~an emission spectrum comprising at least two spectral peaks that coincide with photosynthetic absorption peaks of plants, wherein the emission spectrum comprises emissions at two or more wavelengths of high photoreception sensitivity of insect vision, ~~and the said increased reflectivity and/or~~ wherein high sensitivity is understood to exceed ~~the 90%-, 80%-, 70%-, 60%-, 50%-, 40%- or 30%-~~a 70% level of maximum of said ~~reflectivity and/or~~photoreception sensitivity in the UV (300-400 nm) to far red (700-800 nm) band.

2. A light device as claimed in claim 1, wherein said light device is arranged into a greenhouse that is arranged to cultivate insect pollinated plants.

~~3. A light device as claimed in claim 1, wherein said light device is arranged with at least one LED and/or quantum dot.~~

43. A light device as claimed in claim 1, wherein ~~at least one spectral peak is arranged to occur~~the wavelengths of high sensitivity are at any two or more of the following wavelengths: 348 nm, 424 nm, 435 nm, 533 nm, 538 nm with an error range of ± 10 nm ~~and/or the lighting device is arranged to emit a broad and flat spectral peak resulting in a broad UV continuum component~~.

~~5~~4. A light device as claimed in claim 1, wherein the light device is a horticultural lighting fixture comprising at least one Light Emitting Diode (LED) having

a) first spectral characteristics including a peak in the wavelength range from 600 to 700 nm and arranged to exhibit a full width at half maximum of at least 50 nm or more,

b) second spectral characteristics with a maximum of 50 nm full width at half maximum and arranged to exhibit a peak wavelength in the range from 440 to 500 nm.

~~6~~5. A light device as claimed in claim 1, wherein at least a part or the whole of the emission at wavelengths of 500–600 nm is arranged to be minimized and/or omitted and/or to be reduced below the intensity in 400-500 nm band and below the intensity in 600-700 nm band.

~~7~~6. A light device as claimed in claim 1, wherein the emission spectrum is arranged to comprise far red radiation (700-800 nm).

~~8~~7. A light device as claimed in claim ~~3~~1, wherein all or part of the emission at the wavelength band of 600–800 nm is arranged to be generated using a whole or partial wavelength up-conversion of the LED chip radiation power.

~~9~~8. A light device as claimed in claim 1, wherein at least one said spectral peak is arranged to be turned on or off without influencing the emission of other spectral components in said lighting device.

~~10~~9. A plant cultivation method, wherein the method comprises illuminating insect-pollinated plants ~~are illuminated~~ with a light device comprising at least one LED and/or quantum dot emitting ~~at least one spectral peak at a wavelength that coincides with increased reflectivity of flowers of said pollinating plants, said light device emitting at least one spectral peak at a wavelength that coincides with increased~~an emission spectrum comprising at least two spectral peaks that coincide with photosynthetic absorption peaks of plants, wherein the emission spectrum comprises emissions at two or more wavelengths of high photoreception sensitivity of insect vision, ~~and the said increased reflectivity and/or~~wherein high sensitivity is understood to exceed ~~the 90%, 80%,~~

~~70%, 60%, 50%, 40% or 30%~~ 70% level of maximum of said reflectivity and/or sensitivity in the UV (300-400 nm) to far red (700-800 nm) band.

~~11~~10. A plant cultivation method as claimed in claim ~~10~~9, wherein said light device is used in a greenhouse where insect pollinated plants are cultivated.

~~12. A plant cultivation method as claimed in claim 10, wherein said light device comprises at least one LED and/or quantum dot.~~

~~13~~11. A plant cultivation method as claimed in claim ~~10~~9, wherein ~~at least one spectral peak occurs~~the wavelengths of high sensitivity are at any two or more of the following wavelengths: 348 nm, 424 nm, 435 nm, 533 nm, 538 nm with an error range of ± 10 nm ~~and/or and/or the lighting device emits a broad and flat spectral peak resulting in a broad UV continuum component~~.

~~14~~12. A plant cultivation method as claimed in claim ~~10~~9, wherein the light device is a horticultural lighting fixture comprising at least one Light Emitting Diode (LED) having

c) first spectral characteristics including a peak in the wavelength range from 600 to 700 nm and exhibiting a full width at half maximum of at least 50 nm or more,

d) second spectral characteristics with a maximum of 50 nm full width at half maximum and exhibiting a peak wavelength in the range from 440 to 500 nm.

~~15~~13. A plant cultivation method as claimed in claim ~~10~~9, wherein at least a part or the whole of the emission at wavelengths of 500-600 nm is minimized and/or omitted and/or reduced below the intensity in 400-500 nm band and below the intensity in 600-700 nm band.

~~16~~14. A plant cultivation method as claimed in claim ~~10~~9, wherein the emission spectrum comprises far red radiation (700-800 nm).

~~17~~15. A plant cultivation method as claimed in claim ~~12~~9, wherein all or a part of the emission at the wavelength band of 600-800 nm is generated using a whole or partial wavelength up-conversion of the LED chip radiation power.

~~18~~16. A plant cultivation method as claimed in claim ~~10~~9, wherein at least one said spectral peak is arranged to be turned on or off without influencing the emission of other spectral components in said lighting device.