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Abstract.*As a result of analysis sposobov and structures of devices for measuring usylyy rezanyya feed grains proposals Novaya Constructions instruments, kotoryya sposoben fyksyrovat Dynamic usylyya rezanyya s s values on display Monitors computer.*

Keywords: usylye rezanyya, dynamics, furazhnoe grains Machine

Annotation.*As a result of analysis of methods and constructions of devices for measuring of efforts of cutting of cornmeal, the new construction of device which is able to fix dynamic efforts of cutting with the reflection of their values on the monitor of computer is offered.*

Key words: effort cutting, dynamics, cornmeal, pile-driver

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REQUIREMENTS spectral composition of artificial sources of optical radiation to grow plants in building greenhouses

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Abstract. *The necessity of artificial plants dooprominennya long-wave ultraviolet radiation for growing plants in buildings protected ground*.

Keywords: requirements, spectrum emission plants

Formulation of the problem. The life and development of plants is impossible without sunlight. Mastynu radiation spectrum, which is perceived by plants often called fotosyntezno active radiation (PAR or FAR) is that many physiological processes in plants can not take place without his participation.

The purpose of research - Requirements to substantiate the spectral composition of artificial radiation sources used in plant greenhouses based on ecological solar radiation.

Materials and methods of research. The study was conducted by analyzing research action spectrum of solar radiation and widespread artificial sources of optical radiation in plant growing.

Results. Research has established that under visible light (with a wavelength peaks at 440 nm and 680 nm) in plants made the formation of chlorophyll, formed leaves, flowers, fruits, is the synthesis of vitamins, enzymes and other substances. In the wild plants grow under the entire spectrum of sunlight, which in addition to visible light present ultraviolet and infrared. Moreover, the threshold wavelength and its intensity depending on the time of day (the angle of inclination of the sun to the horizon) and the season. Below is a table. 1, which shows the relationship of different parts of the spectrum of solar radiation depending on the angle above the horizon 50 ° (latitude in Kyiv) [1].

1. The spectral composition of solar radiation at different altitudes of the sun above the horizon (in%).

The intensity of the light emission spectrum of areas in%	The height of the sun, hail			
	0.5	10	30	50
UV (295-380)	0	1.0	2.7	3.2
Visible (380-780)	31.2	41.0	43.7	43.9
Including:				
Violet (380-4430)	0	0.8	3.8	4.5
Blue (430-490)	0	4.6	7.8	8.2
Green (490-570)	1.7	5.9	8.8	9.2
Yellow (570-600)	4.1	10.0	9.8	9.7
Red (600-780)	25.4	19.7	13.5	12.2
Infrared (780-34000)	68.8	58.0	54.6	52.3

Total%	100	100	100	100

Analysis of the data table shows that at 50 ° arrangement of the sun above the ground (EURO latitude of Kyiv) is the ratio of the spectrum: ultraviolet radiation - 3.2%, visible - 43.7% IR - 54.6% of the radiation. With respect to visible light, ultra is about 8%, which indicates its biological effects on wildlife Earth.

High sensitivity and diversity of plant responses to UV rays due to the fact that they are actively absorbed many physiologically important compounds of plant cells [2]. In fact, plants in natural growing constantly exposed to medium (280-320 nm) and long-wave (320-400 nm) ultraviolet radiation from the sun.

The role of UV radiation in natural plant life in recent years has not been studied.
There is work (Zaitsev, 1953; Gursky, 1962; Sokolov, 1962, 1965, Dubrova, 1963.1968; Nasыrova, 1966; Fraykyna, 1987; Hyllera, 1965, 1988; Shulgyna, 1978, 1990; Brodfuhrer, 1955; Vellmann, 1983 ; Frederick, 1989; Coohill, 1989; Tevini, Teramura, 1989), whose relevance is undeniable, but they do not cover all aspects of ultraviolet radiation.

Therefore, the study of the regulatory role of UV radiation in different spectral composition morphogenesis and metabolism of plants is of great interest. Clarification of the role of ultraviolet and visible light (400-700 nm) in the formation morphophysiological features plants and their mechanisms of adaptation to adverse environmental conditions is one of the important issues of modern conditions of development of human society. Of particular relevance acquires the matter for growing plants in greenhouses conditions where the use of artificial optical radiation is a major part of the process of growing plants.

Exploratory studies found a positive biological effects of ultraviolet radiation (300 - 400 nm) to accelerate flowering and formation of ovaries vegetables, which leads to increased quality and quantity of production. [4] If open ground plants obtained ultraviolet radiation ranging from 295 nanometers (lowest recorded wavelength ultraviolet rays that reached the earth's surface is 283 nm [6]), which is 3 ... 5% of the total solar radiation - the greenhouses in autumn-winter months they almost did not get it [3].

It should be noted that the combined effect of UV radiation and visible light, if present in the emission spectrum of the light source results in significant changes in the direction of biochemical processes and their further growth. This is illustrated by experiments with seeds Phacelia Phacelia tanacetifolia, in which due to the high sensitivity even normal visible light inhibits germination. In this plant UV irradiation (λ = 254 nm,

E = = 200 mW / cm 2; λ = 365 nm, E = 500 mW / cm2, T = 3-6 h.) Reduces germination at 35-60% (Schulz, Klein , 1963). It was established that the reaction Phacelia seeds varies depending on the sequence in which radiation seeds carried by light of different spectral composition (Table. 2).

2. The radiation spectrum at different Phacelia seed germination.

The sequence of exposure	Duration of lighting hours	The suppression of germination%
Darkness	6	0
Blue light 1000 mW / cm2	6	37
Red light 1000 mW / cm2	6	44
UV radiation. 200 mW / cm2	6	64
Blue> UFvyprosinyuvannya	3> 3	18
UV> blue	3> 3	37
Red> UV	3> 3	20
UV> red	3> 3	64

From Table. 2 shows that when UV irradiation after chereduye blue or red light, it reduces their effect and, conversely, the effect is enhanced when given after UV light more light spectral composition. These reactions indicate the presence of the seeds of different photoreceptors that control germination and subsequent growth. Perhaps photoreceptors associated with such systems: 1) photochemical associated with photosynthesis; 2) Photochemical controlling phototropism; 3) fitohromnoyu related to germination and morphogenesis in part; 4) high-energy system morphogenesis (Resurrection, 1965; Mohr, 1964). The interaction of these systems, their inhibition and activation with UV irradiation play a crucial role in the growth and development of plants. It should be noted that the response of plants to UV radiation is highly dependent on the intensity of visible light in which the plants are grown.

The current state of science and technology allows us to develop artificial sources of optical radiation with desired portions of the spectrum and intensity. So in the greenhouse and greenhouses for growing vegetables seedlings more powerful it was possible to use UV filters which cut off depressing harmful short-wavelength spectra of light in powerful xenon lamps. The results show that long-wave ultraviolet radiation (from 295 to 380 nm) is an integral component of natural solar radiation and the moderate doses required for normal plant development. This radiation penetrates the epidermis surface of the leaves and has a significant impact on the livelihoods of plants.

But today not studied the question of the most effective range of the area (within the wavelength) in the ultraviolet and radiation dose [1,

2, 5, 7]. It was established that in a closed ground additional ultraviolet radiation (Euf <2.5 W / m2) [3] caused a stimulating effect on photosynthesis of leaves, chlorophyll content and accumulation of useful biomass in radish and lettuce. It was also established that UV radiation accelerates their tomato plants flowering and fruiting, and enhances the content of soluble sugars and vitamin C [4].

In recent years, new approaches to the study of photo-biological effects and the rapid development of LED radiation sources there is a unique opportunity to control the growth and productivity of plants with modified levels of ultraviolet radiation on plants. At the same time studying the biological effects of ultraviolet radiation biosphere is important to monitor the situation in Ukraine - in connection with the growing anthropogenic pollution, more frequent breaks Earth's protective ozone layer and, accordingly, the possibility of a short-action of the (harmful) UV part of the spectrum of solar radiation.

Conclusions

1. Ultraviolet radiation in small doses in the range 300-400 nm has positive biological effect and helps accelerate flowering and formation of ovaries vegetables.
2. Through controlling the intensity and duration of UV doopprominyuvannya greenhouse plants adjustable technological process for plant products and thus predict the quality and quantity of output products.
3. With production growing plants in greenhouses their yield and quality depend primarily on matching the spectral composition of radiation from artificial light sources spectrum of natural sunlight. According to the analysis of the solar spectrum at latitude Kyiv following relationship is the most effective range of areas of artificial sources - ultraviolet (290-380) / visible (380-760), infrared (760-1000), 3/43/54.

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Abstract.*Need Obosnovыvaetsya yskusstvennoho doobluchenyya plants dlynnovolnovыm ultrafyoletovыm radiation at Growing plants in soil constructions of zaschyschennoy.*
Keywords: Requirements, spectrum, radiation, plants

Annotation.*The necessity of lamplight of plants is grounded long-wave ultraviolet radiation at growing of plants in building of the protected soil.*
Key words: requirements, spectrum, radiation, plants

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AUTONOMOUS ELECTROMECHANICS COMPLEX
With compensated asynchronous machine

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Abstract.*The design of autonomous electromechanical set of compensated induction machines.*
Keywords: autonomous electromechanical complex compensated induction motor

Formulation of the problem. Important for practice, but very difficult regime for electric cars is the joint work in an autonomous system commensurate largest power generator and engine. It is especially