



**Slovak University of Agriculture in Nitra  
Faculty of Agrobiolgy and Food Resources  
Institute of Biodiversity Conservation and Biosafety  
Department of Genetics an Plant Breeding  
Excellent Centre for the Conservation and Sustainable Use  
of Agrobiodiversity  
Research Centre AgroBioTech**

and



**M.M. Gryshko National Botanical Garden of National  
Academy of Sciences of Ukraine, Kyiv, Ukraine  
Department of Fruit Plants Acclimatization**

# **Book of Abstracts**

*of the*

**4<sup>th</sup> International Scientific  
Conference**

**Agrobiodiversity for Improve  
the Nutrition, Health and Quality  
of Human and Bees Life**

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of the International Conference**

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and Quality of Human and Bees Life**

in the framework of

**AgroBioNet**

International Network

within the implementation of the International Program

**'Agrobiodiversity for Improve the Nutrition, Health and Quality of Life'**

in the form of solved research, education and development projects and research stays

Authors and author collectives present at the international conference in lectures,  
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## Dear Participants

For us, the organizers of the 4<sup>th</sup> International Conference 'Agrobiodiversity to Improve Nutrition, Health and Quality of Human and Bees Life', it is a great pleasure and as well as a great honour to welcome you to Slovakia, the ancient city Nitra and on the Slovak University of Agriculture in Nitra.

The Congress Centre of the Slovak University of Agriculture in Nitra will be the venue of scientific and academic discussions, presentations, interventions, confrontation of opinions, exchange of knowledge and experience, initialing new contacts and meetings of cooperating members of AgroBioNet International network.

The Slovak University of Agriculture in Nitra, represented by the Institute of Biodiversity Conservation and Biosafety and the M.M. Gryscho National Botanical Garden at the National Academy of Sciences of Ukraine in Kyiv, represented by the Department of Plant Introduction, initiated in 2013 the international conferences about biodiversity and agrobiodiversity and they want to continue and develop them.

The reason is very simple. The theme of International Conferences focused on the conservation and usage of agrobiodiversity to improve nutrition, health and quality of life is the foundation of the present civilization. Therefore, the issue brings together not only all-conference participants but also other botanists, researchers, breeders, seedsmen, growers, processors and other professions they recognize, using not only traditional plant species but also forgotten, less-used and less-known species for food security, food safety and resolving the other needs of civilization.

This is evidenced by the very extensive focus of the presented knowledge and results achieved in the solution of research and development projects of research and academic institutions processed in the form of abstracts in the submitted publication of this year's international conferences.

Researchers' efforts to conduct experiments aimed at preserving, identifying, evaluating, expanding and exploiting the unique phenomenon of biodiversity and the still undervalued use of agri-biodiversity are also evidence that, despite the lack of fund, technical equipment, and national governments understanding, researchers present extensive original knowledge and results.

On behalf of the organizers of this conference, we wish all participants a pleasant stay in Slovakia, in the city Nitra and at the Slovak University of Agriculture in Nitra. I wish to all authors and co-authors of the presented scientific publications a successful presentation in a creative atmosphere.

The International Conference organizers also thank all the other co-organizers of the international conference for their help and support!

**Assoc. Prof. Ján Brindza**  
**Institute of Biodiversity Conservation and Biosafety,**  
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## TABLE OF CONTENTS

### ORAL PRESENTATIONS

<b>Brindza J.</b> .....	<b>18</b>
BIODIVERSITY IN THE LIGHT OF CURRENT, FORGOTTEN AND FORBIDDEN SCIENCES	
<b>Brindza J., Miko M.</b> .....	<b>20</b>
45 YEARS OF IMPLEMENTATION PROGRAM ABOUT CONSERVATION AND USE OF AGROBIODIVERSITY IN THE INSTITUTE OF BIODIVERSITY CONSERVATION AND BIOSAFETY AND DEPARTMENT OF GENETICS AND PLANT BREEDING AT THE SLOVAK UNIVERSITY OF AGRICULTURE IN NITRE	
<b>Brovarskiy V., Brindza J., Tkachenko O.</b> .....	<b>22</b>
ETHOLOGY OF BEES BY USING DIFFERENT CONSTRUCTIONS OF HANGING POLLEN COLLECTORS	
<b>Chavdar N., Rushchuk A.</b> .....	<b>23</b>
CHARACTERISTIC OF NEW <i>SESAMUM INDICUM</i> L. CULTIVARS IN THE CONDITIONS OF PRIDNESTROVIE	
<b>Dorykevych K., Hudz N.</b> .....	<b>24</b>
BEE POLLEN AND BEE BREAD IN TRADITIONAL MEDICINE	
<b>Dvykaliuk R., Adamchuk L.</b> .....	<b>25</b>
WORLD TRENDS AND TECHNOLOGIES FOR PROPOLIS PRODUCTION	
<b>Dzyba A.</b> .....	<b>26</b>
CENTURY-OLD DENDROEXOTICS OF THE UKRAINIAN POLISSYA	
<b>Elisovetcaia D., Ivanova R., Gladei D., Simkova J., Brindza J.</b> .....	<b>27</b>
BIOLOGICAL ACTIVITY OF EXTRACTS FROM SOME SPECIES OF CONIFEROUS PLANTS	
<b>Fehér A., Končeková L., Halmová D.</b> .....	<b>28</b>
OVERVIEW OF TRADITIONAL ECOLOGICAL KNOWLEDGE AND PERSPECTIVES OF ITS APPLICATIONS IN SLOVAKIA	
<b>Gálik M.</b> .....	<b>29</b>
GENETIC RESOURCES OF FRUIT TREES AND THEIR USE IN THE AGROFORESTRY	
<b>Gášparovski J.</b> .....	<b>30</b>
ACTIVITIES OF THE CENTRE FOR ORGANIC PRODUCTION IN SELENČA	
<b>Garipova S., Markova O., Shayahmetova A., Lastochkina O., Pusenkova L.</b> .....	<b>31</b>
AVAPTIVE PROPERTIES OF BEANS CULTIVARS IN THE CONDITIONS OF SOUTH URALS AND THEIR INTERACTION WITH ENDOPHYTIC BACTERIA	
<b>Garkava K., Dvopola K., Tymoshenko U.</b> .....	<b>32</b>
ANTIEMETIC PROPERTIES OF MEDICINAL PLANTS	
<b>Globa O.</b> .....	<b>33</b>
ENDOECOLOGICAL STATE OF THE CHILD HEALTH	
<b>Gołba M., Sokół-Łętowska A., Kucharska A.</b> .....	<b>34</b>
COMPARISON OF ANTIOXIDATIVE PROPERTIES OF FRUIT POMACE FROM DIFFERENT CULTIVARS OF HONEYSUCKLE BERRY	
<b>Grygorieva O., Gurnenko I., Klymenko S., Motyleva S.</b> .....	<b>35</b>
POLLEN MORPHOLOGY OF SOME SPECIES OF THE GENUS <i>AMELANCHIER</i> MEDIK.	
<b>Gumeniuk I., Botsula O.</b> .....	<b>36</b>
EFFECT OF SEED INOCULATION WITH NODULE BACTERIA ON SOYBEAN YIELD	
<b>Hozlár P., Matušková K., Ondrejčíková P.</b> .....	<b>37</b>
EVALUATION OF <i>CAMELINA SATIVA</i> (L.) CRANTZ GENOTYPES VARIABILITY IN MORPHOLOGICAL AND ECONOMIC CHARACTERS AS PROMISING BREEDING MATERIALS	
<b>Hryhorenko A.</b> .....	<b>38</b>
HISTORY OF THE CREATION OF ORCHARDS IN THE LONG-STANDING ESTATES OF KHARKIV REGION (ON THE EXAMPLE OF KRASNOKUTSKY PARK)	
<b>Hudz N., Białoń M., Svydenko L., Wieczorek P.P.</b> .....	<b>39</b>
CHEMICAL COMPOSITION OF <i>SATUREJA MONTANA</i> L. CULTIVATED IN UKRAINE	



<b>Hudz N., Tkachenko O., Brindza J.</b> .....	<b>40</b>
DETERMINATION OF THE TOTAL PHENOLIC CONTENT IN THE TINCTURE OF PROPOLIS OF UKRAINIAN ORIGIN	
<b>Kalista M., Nikolaieva N., Brindza J.</b> .....	<b>41</b>
ANTIOXIDANT ACTIVITY OF LEAF EXTRACTS OF <i>CRAMBE KOKTEBELICA</i> (JUNGE) N. BUSCH AND <i>CRAMBE MITRIDATIS</i> JUZ.	
<b>Khanyk N., Hudz N., Dorykevych K.</b> .....	<b>42</b>
ASSORTMENT OF PHARMACEUTICALS BASED ON BEEKEEPING PRODUCTS IN UKRAINE AND REQUIREMENTS FOR THEIR QUALITY	
<b>Klymenko S.</b> .....	<b>43</b>
FRUIT PLANTS OF THE WORLD FLORA IN INTRODUCTION AND SELECTION STUDIES IN THE FOREST-STEPPE OF UKRAINE	
<b>Kryvtsova M., Salamon I., Koščová J., Eftimova J.</b> .....	<b>44</b>
ANTIMICROBIAL AND SOME BIOCHEMICAL PROPERTIES OF <i>VACCINIUM VITIS-IDAEA</i> L.	
<b>Kryvyi M., Lisohurska D., Lisohurska O., Furman S.</b> .....	<b>45</b>
DARK FOREST BEES IN POLISSYA OF UKRAINE	
<b>Lastochkina O., Pusenkova L., Baymiev A., Shpirnaya I., Shayahmetova A., Kulabuhova D., Koryakov I., Garipova S., Kasnak C., Palamutoglu R.</b> .....	<b>46</b>
EFFECT OF ENDOPHYTIC <i>BACILLUS SUBTILIS</i> AND SALICYLIC ACID ON RESISTANCE OF <i>SOLANUM TUBEROSUM</i> L. (POTATO) TO POSTHARVEST DISEASES	
<b>Lokutova O.</b> .....	<b>47</b>
APITOURISM IN CONTEXT OF SOCIO-ECONOMIC AND ECOLOGICAL ASPECTS	
<b>Losev O., Yahich H.</b> .....	<b>48</b>
HOMOGENATE OF DRONE LARVAS – BIOLOGICALLY VALUABLE FOOD PRODUCT	
<b>Loskutov I.</b> .....	<b>49</b>
OATS – A CROP FOR FUNCTIONAL NUTRITION	
<b>Lukash O.</b> .....	<b>50</b>
RESOURCE POTENTIAL OF <i>SAMBUCUS NIGRA</i> L. IN CHERNIHIV POLISSYA (UKRAINE)	
<b>Maga I.</b> .....	<b>51</b>
USING AN AZO COUPLING REACTION TO DETERMINE 2,6-DIMETHOXYANILINE BY METHOD HPLC	
<b>Meglič V., Hauptvogel P., Bilsborrow P., Janovska D., Grausgruber H., Dolničar P., Pagnotta M., Petrovič K., Kuhar A.G., Vogt-Kaute W.</b> .....	<b>52</b>
ECOBREED-INCREASING OF THE EFFICIENCY AND COMPETITIVENESS OF ORGANIC CROP BREEDING	
<b>Melnychuk O., Ozheredov S., Bayer O., Shisha O., Rakhmetov D., Rakhmetova S., Yemets A., Blume Ya.</b> .....	<b>53</b>
POLYPLIIDY INDUCTION IN GIANT MISCANTHUS ( <i>MISCANTHUS × GIGANTEUS</i> GREEF ET DEU.)	
<b>Pokhylchenko O., Hotka P., Solomakha N., Mandzuk R., Boyko N., Vakulenko T.</b> .....	<b>54</b>
OPPORTUNITY FOR CREATING STONE PINES' ORCHARDS IN UKRAINE PREREQUISITE FULFILLED	
<b>Poladova G., Sadiqova S.</b> .....	<b>55</b>
RELATIONSHIP OF QUALITY INDICATORS OF SOFT WHEAT VARIETIES DEPENDING ON THE GRAIN COLOR	
<b>Povoznikov M., Adamchuk L.</b> .....	<b>56</b>
SOCIO-ECONOMIC ASPECTS OF UKRAINE BEEKEEPING DEVELOPMENT	
<b>Rakhmetov D., Vergun O., Rakhmetova S.</b> .....	<b>57</b>
CONTRIBUTION OF THE DEPARTMENT OF CULTURAL FLORA OF M.M GRYSHKO NATIONAL BOTANICAL GARDEN OF UKRAINE IN CONSERVATION, ACQUISITION AND EFFICIENT USE OF NEW PHYTORESOURCES	
<b>Shemediuk A., Shemediuk N.</b> .....	<b>58</b>
CELL CYCLE REGULATION AND PROAPOPTOTIC ACTIVITY OF <i>PHALLUS IMPUDICUS</i> L.	
<b>Shysh S., Shutava H., Mazets Zh.</b> .....	<b>59</b>
ELECTROMAGNETIC RADIATION INFLUENCE ON FOOD QUALITY OF SEEDS AND PRODUCTIVITY OF <i>NIGELLA SATIVA</i> L. PLANTS	

<b>Slyva Yu.</b> .....	<b>60</b>
LEGISLATIVE AND REGULATORY FOOD SAFETY IN UKRAINE	
<b>Sukhenko V., Sukhenko Yu., Sukhenko E., Bal-Prilipko L., Slobodyanyuk N., Stefan E., Kryvoplyas-Volodina L., Gavva O.</b> .....	<b>61</b>
TECHNOLOGY OF MAKING PECTINIST FRUIT PASTES	
<b>Tamrazov T.</b> .....	<b>62</b>
ORGANIC AGRICULTURE IN THE WORLD AND AZERBAIJAN	
<b>Tatarov P., Sandulachi E., Ivanova R.</b> .....	<b>63</b>
EFFECT OF CHANGES IN POLYUNSATURATED FATTY ACIDS ON THE QUALITY OF WALNUT OIL	
<b>Vergun O., Horčínová Sedláčková V., Schubertová Z., Šímková J., Brindza J.</b> .....	<b>64</b>
BIOCHEMICAL COMPOSITION OF BEE POLLEN AND INFLORESCENCES OF <i>BRASSICA NAPUS</i> L. VAR. <i>NAPUS</i>	
<b>Włoszczyńska D., Kucharska A.Z., Klymenko S., Piórecki N.</b> .....	<b>65</b>
EVALUATION OF THE NEW UKRAINIAN CULTIVARS OF CORNELIAN CHERRY ( <i>CORNUS MAS</i> L.) FRUITS	
<b>Zhurba M.</b> .....	<b>66</b>
SPECIES OF THE GENUS <i>LYCIUM</i> L. IN THE COLLECTION OF M.M. GRYSHKO NATIONAL BOTANICAL GARDEN OF NAS OF UKRAINE	
<b>POSTER PRESENTATIONS</b>	
<b>Adamchuk L., Akulonok O., Sarana Yu., Šímková J.</b> .....	<b>68</b>
SENSORY ANALYSIS OF BEE BREAD WITH DIFFERENT PRODUCTION TECHNOLOGIES	
<b>Adamchuk L., Kharchenko I., Komar Rostyslav, Victor M., Pshinko G.</b> .....	<b>69</b>
RESEARCH ON RADIOACTIVITY OF UKRAINIAN HONEYS	
<b>Adamchuk L., Shynder O., Šímková J.</b> .....	<b>70</b>
DIVERSITY OF POLLEN GRAINS OF <i>TILIA</i> GENUS IN UKRAINIAN HONEYS	
<b>Andrusyshyna I., Golub I., Lampeka O., Andrusyshyn A.</b> .....	<b>71</b>
ESTIMATION OF ANTHROPOGENIC LOADING OF THE HUMAN BODY BY CHEMICAL ELEMENTS ACCORDING TO THE DATA OF ECOLOGICAL AND HYGIENIC MONITORING IN UKRAINE	
<b>Aksonova A., Ventskovskaya I., Bondarenko N., Aksonov P., Palamarchuk O.</b> .....	<b>72</b>
EXPERIENCE OF RATIONAL VITAMIN SUPPLEMENTS INTAKE IN THE OBSTETRICIAN PRACTICE	
<b>Boiko N., Doiko N.</b> .....	<b>73</b>
COLLECTION OF OLD CULTIVARS OF APPLE TREES IN THE DENDROLOGICAL PARK 'OLEXANDRIA' OF THE NAS OF UKRAINE	
<b>Brindza J., Grygorieva O.</b> .....	<b>74</b>
INTERNATIONAL COOPERATION IN THE PROGRAM OF CONSERVATION AND USING OF AGROBIODIVERSITY IN THE INTERNATIONAL AGROBIO <sub>NET</sub> NETWORK	
<b>Brovarska O., Varbanets L., Likhanov A.</b> .....	<b>75</b>
CHARACTERIZATION OF THE <i>PSEUDOMONAS PUTIDA</i> LIPOPOLYSACCHARIDES, CAUSATIVE AGENTS OF CHESTNUT DISEASES	
<b>Bulyhina T., Brovarska O.</b> .....	<b>76</b>
PROTEOLYTIC ACTIVITY OF MICROORGANISMS ISOLATED FROM BEES AND WAX MOTHS	
<b>Buyun L., Ivannikov R., Yakymets V., Kozhokaru A., Stepan'kov R., Kharitonova I.</b> .....	<b>77</b>
'PHYTOUNITS' FOR AMELIORATION OF INDOOR AIR ENVIRONMENT WITHIN HEALTH-CARE FACILITIES	
<b>Chavdar N., Rushchuk A., Shaykhirov D.</b> .....	<b>78</b>
<i>SILYBUM MARIANUM</i> (L.) GAERTN. PLANTS POPULATION AND WEEDS DISTRIBUTION	
<b>Dmytrukha N., Korolenko T., Lahutina O., Lehkostup L.</b> .....	<b>79</b>
THE SAFETY ASSESSMENT OF INNOVATIVE DRUGS OF MICROELEMENTS RECEIVED BY NANOTECHNOLOGY	
<b>Feketa I.</b> .....	<b>80</b>
MORPHOMETRIC CHARACTERISTICS AND GROWING OF <i>POTENTILLA ERECTA</i> (L.) RAEUSCH.	

<b>Frolova N., Yushchenko N., Korablova O.</b> .....	<b>81</b>
ISOMERS OF ESSENTIAL OILS COMPONENTS AND THEIR OPTICAL CHARACTERISTICS	
<b>Frolova N., Yushchenko N., Korablova O.</b> .....	<b>82</b>
DEVELOPMENT OF THE COMBINATIONS OF SPICES FOR THE AYURVEDIC DISHES	
<b>Goncharovska I., Kuznetsov V.</b> .....	<b>83</b>
MORPHOMETRIC LEAF VARIATION OF VARIOUS CULTIVARS CRABAPPLE	
<b>Grygorieva O., Klymenko S., Ilinska A., Kuklina A., Vinogradova Yu., Brindza J.</b> .....	<b>84</b>
EVALUATION OF <i>LONICERA CAERULEA</i> L. GENOTYPES BASED ON MORPHOLOGICAL CHARACTERISTICS OF FRUITS GERMPLASM COLLECTION	
<b>Grygorieva O., Klymenko S., Vergun O., Piórecki N., Brindza J., Ivanišová E.</b> .....	<b>85</b>
BIOLOGICAL ACTIVITY OF LEAVES OF NON-TRADITIONAL PLANTS	
<b>Horčinová Sedláčková V., Gurnenko I., Brindza J.</b> .....	<b>86</b>
SCANNING ELECTRON MICROSCOPY STUDY OF POLLEN MORPHOLOGICAL CHARACTERS OF <i>SAMBUCUS NIGRA</i> L.	
<b>Hryhorenko N., Cherednychok O., Babiazh A., Hryhorenko A.</b> .....	<b>87</b>
INNOVATIVE TECHNOLOGY FOR THE PRODUCTION OF ORGANIC SUGAR SYRUP OBTAINED FROM SWEET SORGHUM AND ITS USE FOR THE PRODUCTION OF HEALTHY FOODS	
<b>Ivanišova E., Grygorieva O., Klymenko S., Vergun O., Mareček J., Brindza J.</b> .....	<b>88</b>
CONTENT OF POLYPHENOLS, FLAVONOIDS AND ANTIOXIDANT ACTIVITY OF FRESH FRUITS AND JELLIES PREPARED FROM DIFFERENT LESS KNOWN FRUIT SPECIES	
<b>Ivannikov R., Laguta I., Buyun L., Stavinskaya O., Anishchenko V., Boyko O.</b> .....	<b>89</b>
PRELIMINARY PHYTOCHEMICAL SCREENING OF ORCHID PLANTS GROWN <i>EX SITU</i> AND <i>IN VITRO</i>	
<b>Ivannikov R., Lobova O., Ivannikova N., Krasnenkova I.</b> .....	<b>90</b>
EXPERIENCE OF OBTAINING OF PLANT TISSUE CULTURES OF CACTACEAE JUSS.	
<b>Ivanova R.</b> .....	<b>91</b>
ANTIOXIDANT ACTIVITY OF EXTRACTS FROM <i>PHYTOLACCA AMERICANA</i> L. BERRIES	
<b>Ivanytska B., Zaimenko N., Didyk N.</b> .....	<b>92</b>
EFFECT OF SILICEOUS MINERALS ON TOMATO ( <i>SOLANUM LYCOPERSICUM</i> L.)	
<b>Jančovic J.</b> .....	<b>93</b>
YEAR (2019) OF SIGNIFICANT ANNIVERSARIES OF SLOVAK BEEKEEPING	
<b>Juríková T., Fatrcová-Šramková K., Schwarzová M.</b> .....	<b>94</b>
LESSER KNOWN FRUIT SPECIES AS A SOURCE OF VALUABLE BIOACTIVE SUBSTANCES	
<b>Karpova I., Palchykovska L., Lylo V.</b> .....	<b>95</b>
BIOLOGICAL ACTIVITY OF <i>DIOSPYROS KAKI</i> THUNB. LECTIN	
<b>Kazantsev T.</b> .....	<b>96</b>
USING OF DRONES FOR CROP PHENOTYPING UNDER BREEDING PROCESS	
<b>Klymenko S.</b> .....	<b>97</b>
CORNELIAN CHERRY ( <i>CORNUS MAS</i> L.): GENESIS OF UKRAINIAN BREEDING CULTIVARS	
<b>Klymenko S., Kucharska A.Z., Piórecki N.</b> .....	<b>98</b>
DETERMINATION OF ANTIOXIDANT CAPACITY AND POLYPHENOLS CONTENT IN FRUITS OF CULTIVARS OF <i>CHAENOMELES JAPONICA</i> LINDL. EX SPACH.	
<b>Klymenko S., Kucharska A.Z., Piórecki N., Sokół-Łętowska A.</b> .....	<b>99</b>
ANTIOXIDANT ACTIVITIES AND PHENOLIC COMPOUNDS IN FRUITS OF CULTIVARS OF CORNELIAN CHERRY ( <i>CORNUS MAS</i> L.)	
<b>Kohuch T., Kryvtsova M., Timoshok N., Spivak M.</b> .....	<b>100</b>
ANTIMYCOTIC EFFECT OF SOME ESSENTIAL OILS ON <i>CANDIDA</i> CLINICAL ISOLATES	
<b>Konovalenko I., Polovko N.</b> .....	<b>101</b>
RESEARCH OF EXTRACTION CONDITIONS OF PHYTOCOMPOSITION FOR NON-HORMONAL TREATMENT OF MENOPAUSE	
<b>Korablova O., Frolova N., Yushchenko N., Rakhmetov D., Shanayda M., Semenchenko O.</b> .....	<b>102</b>
BIOECOLOGICAL FEATURES OF PLANTS SPECIES OF <i>SALVIA</i> L. GENUS UNDER CONDITIONS OF THE FOREST-STEPPE ZONE OF UKRAINE	

<b>Kostenko S., Svyrydenko N., Oblap R., Novak N.</b> .....	<b>103</b>
DGAT1 GENE POLYMORPHISM INFLUENCE ON A LACTIC PRODUCTIVITY OF UKRAINIAN BLACK-AND-WHITE MILK BREED COWS	
<b>Kovalchuk I., Pashchenko A., Kykish I.</b> .....	<b>104</b>
BIOLOGICAL ACTION OF THE MICROELEMENTS CITRATES IN HONEY BEES BODY AND THEIR PRODUCTS	
<b>Kravets V., Dzyba A.</b> .....	<b>105</b>
DISTRIBUTION OF <i>GINKGO BILOBA</i> L. IN UKRAINE	
<b>Kremenetska Ye.</b> .....	<b>106</b>
SOCIO-ECONOMIC ASPECTS OF NON-TIMBER FOREST PRODUCTS' CERTIFICATION IN UKRAINE	
<b>Kryvtsova M., Koščová J., Király J., Spivak M.</b> .....	<b>107</b>
ANTIBIOFILM-FORMING ACTIVITY OF <i>VACCINIUM VITIS-IDAEA</i> L. LEAVES EXTRACT	
<b>Kryvyi M., Dikhtiar O., Brindza J., Zavadskiy M.</b> .....	<b>108</b>
ANTIOXIDANT PROPERTIES OF DIFFERENT KINDS OF FODDER FOR FEEDING BEES	
<b>Kucharska A.Z., Grygorieva O., Sokół-Łętowska A., Klymenko S., Piórecki N.</b> .....	<b>109</b>
BIOLOGICAL ACTIVITY OF JUJUBE FRUITS ( <i>ZIZIPHUS JUJUBA</i> MILL.)	
<b>Kuznetsova E., Nasrullaeva G., Kuznetsova E.</b> .....	<b>110</b>
BIOLOGICAL AVAILABILITY OF ZINC, IRON AND MANGANESE IN THE <i>TRITICUM DICOCCON</i> (SCHRANK) SCHÜBL. GRAIN	
<b>Kyrpa-Nesmiian T., Kuchuk M.</b> .....	<b>111</b>
CULTIVATION OF TOBACCO PLANTS EXPRESSING <i>DESC</i> AND <i>DESA</i> GENES OF DESATURASE CYANOBACTERIA IN CONDITIONS OF OSMOTIC STRESSES	
<b>Kysel' M., Žiarovská J., Medo J., Hricová A.</b> .....	<b>112</b>
CHARACTERIZATION OF BACTERIAL ENDOPHYTES OF AMARANTHUS CULTIVARS BY NEW GENERATION SEQUENCING TECHNOLOGY	
<b>Los S.</b> .....	<b>113</b>
METHODOLOGICAL APPROACH TO THE ASSESSMENT OF HAZELNUT CULTIVARS POLLEN PRODUCTIVITY	
<b>Matvieieva N., Likhova O., Shakhovskiy A., Kudriavets Yu.</b> .....	<b>114</b>
'GREEN' SYNTHESIS OF HUMAN INTERFERON-A2B IN 'HAIRY ROOT' CULTURE OF <i>ARTEMISIA TILESII</i> PLANTS	
<b>Mendel L., Hauptvogel P., Čičová I.</b> .....	<b>115</b>
PLANT GENETIC RESOURCES INFORMATION SYSTEM OF SLOVAKIA AS THE PRIMARY SOURCE OF INFORMATION	
<b>Mňahončáková E., Vergun O., Grygorieva O., Horčinová Sedláčková V., Šimková J., Brindza J., Ivanišová E.</b> .....	<b>116</b>
ANTIOXIDANT ACTIVITY OF AROMATIC HERBS FROM BOTANICAL GARDEN OF THE SLOVAK UNIVERSITY OF AGRICULTURE IN NITRA	
<b>Mňahončáková E., Vergun O., Grygorieva O., Horčinová Sedláčková V., Šimková J., Brindza J., Ivanišová E.</b> .....	<b>117</b>
ANTIOXIDANT ACTIVITY OF FRUITS EXTRACTS OF <i>CAPSICUM</i> L. CULTIVARS	
<b>Motyleva S., Gins M., Gins V., Kulikov I., Gins E., Pivovarov V., Medvedev S.</b> .....	<b>118</b>
STUDY OF MINERAL COMPOSITION IN THE LEAVES OF <i>AMARANTUS</i> L.	
<b>Motyleva S., Kozak N., Kulikov I., Panishcheva D., Mertvicshcheva M., Imamkulova Z.</b> .....	<b>119</b>
ABOUT THE NUTRITIONAL VALUE OF THE FRUITS OF <i>ACTINIDIA KOLOMIKTA</i> (MAXIM. & RUPR.) MAXIM.	
<b>Ostrovský R., Kobza M., Adamčíková K.</b> .....	<b>120</b>
HEALTH STATE AND STABILITY OF TREES IN URBAN GREENERY	
<b>Palamarchuk O., Dzhurenko N., Todorova V.</b> .....	<b>121</b>
ALIMENTARY AND BIOACTIVE POTENTIAL OF FRUIT NON-TRADITIONAL CULTURES	
<b>Pavliuchenko N., Grygorieva O., Klymenko S.</b> .....	<b>122</b>
ALLELOCHEMICALS FROM <i>CASTANEA SATIVA</i> MILL.: PLANT-ROOT ENVIRONMENT INTERACTIONS	

<b>Petrina R., Suberlyak S., Shved O., Havryliak V., Fedorova O., Hubrii Z., Khomyak S.</b> .....	<b>123</b>
DEVELOPMENT OF TECHNOLOGY FOR CALLUS BIOMASS OF PLANTS OF <i>ASTERACEAE</i> BERCHT. & J. PRESL FAMILY AND <i>RANUNCULACEAE</i> JUSS.	
<b>Pirko Ya., Buy D., Rabokon A., Postovoitova A., Kalafat L., Blume Ya.</b> .....	<b>124</b>
GENOMIC FINGERPRINTING OF <i>LINUM USITATISSIMUM</i> L. CULTIVARS USING INTRON LENGTH POLYMORPHISM OF $\gamma$ -TUBULIN	
<b>Pirko Ya., Rabokon A., Postovoitova A., Kalafat L., Bilonozhko Yu., Blume Ya.</b> .....	<b>125</b>
INTRON LENGTH POLYMORPHISM OF $\beta$ -TUBULIN AND ACTIN GENES AS EFFICIENT TOOL FOR <i>CAMELINA SATIVA</i> (L.) CRANTZ. GENOTYPING	
<b>Postoy V., Mykhailyk D., Vyshnevskaya L.</b> .....	<b>126</b>
RESEARCH ABOUT THE EFFICIENCY OF USING <i>SALIX ALBA</i> L. AND <i>SALVIA OFFICINALIS</i> L. IN MEDICINE AND PHARMACY	
<b>Poyedinok N., Serhiichuk N., Negriyko A.</b> .....	<b>127</b>
BIOLOGICAL EFFECTS OF LOW-INTENSITY NON-IONIZING RADIATIONS IN MUSHROOMS	
<b>Prokopiv A., Piórecki N., Żygała E.</b> .....	<b>128</b>
PRESERVATION AND PROSPECTS OF USE OF THE OLD FRUIT TREE CULTIVARS	
<b>Pushkarova N., Kuchuk M., Blume Ya.</b> .....	<b>129</b>
<i>CRAMBE GRANDIFLORA</i> DC. PLANTS <i>IN VITRO</i> PROPAGATION	
<b>Radchenko V., Matyashuk R., Mazura M., Yurchuk M.</b> .....	<b>130</b>
REACTIONS OF POLLEN OF PLANTS FROM GENUS <i>LYSIMACHIA</i> L. ON DIFFERENT ENVIRONMENTAL CONDITIONS	
<b>Ražná K., Hlavačková L., Nožková J., Brutch N.</b> .....	<b>131</b>
EVALUATION OF MORPHOLOGICAL AND MOLECULAR MARKERS OF FLAX ( <i>LINUM</i> SPP.) GERMPLASM COLLECTION	
<b>Riazhskykh O., Riazhskykh G., Kosiak H.</b> .....	<b>132</b>
INFORMATION TECHNOLOGIES IN MODERN BEEKEEPING	
<b>Shavrina V., Tkach Ye., Ochrimenko S.</b> .....	<b>133</b>
SYNANTROPIC FLORA IN PHYTOCOENOSES OF THE DNISTROVSKY ECOCORRIDOR	
<b>Shelepova O., Vinogradova Yu., Vergun O., Brindza J.</b> .....	<b>134</b>
ANTIOXIDANT ACTIVITY OF HERBAL TEA FROM LEAVES OF <i>SOLIDAGO CANADENSIS</i> L.	
<b>Shymanska O., Vergun O., Kačániová M., Brindza J., Rakhmetov D., Ivanišová E.</b> .....	<b>135</b>
BIOLOGICAL ACTIVITY OF ETHANOL EXTRACTS OF <i>GALEGA OFFICINALIS</i> L.	
<b>Sindarovska Ya., Kuchuk N.</b> .....	<b>136</b>
TRANSGENESIS AS A TOOL FOR WIDENING OF THE GENETIC VARIATIONS AND USING OF MEDICINAL PLANTS	
<b>Slyva Yu., Kolisnichenko D.</b> .....	<b>137</b>
IMPLEMENTATION OF THE PROCESS OF AUDIT OF SUPPLIERS ON RETAIL OF UKRAINE	
<b>Slyva Yu., Silonova N.</b> .....	<b>138</b>
ANALYSIS OF THE KEY ASPECTS OF GLOBAL G.A.P. AND PERSPECTIVES OF ITS IMPLEMENTATION IN UKRAINE	
<b>Spivak S., Pirko Ya., Kozub N., Rabokon A., Karelov A., Ivaschuk B., Yemets A., Blume Ya.</b> .....	<b>139</b>
SCREENING OF WHEAT CULTIVARS WITH EFFECTIVE RESISTANCE GENES TO THE HIGH VIRULENT STRAIN OF STEM RUST UG99	
<b>Štefúnová V., Bežo M., Prostředná M.</b> .....	<b>140</b>
VARIABILITY OF MICROSATELLITE SEQUENCES DISTRIBUTION IN CULTURAL AND WILD GENOTYPES OF AMARANTH ( <i>AMARANTHUS</i> L.) GENOMES	
<b>Sliusar G.</b> .....	<b>141</b>
<i>SCHISANDRA CHINENSIS</i> (TURCZ.) BAILL. IN THE COLLECTION OF THE M.M. GRYSHKO NATIONAL BOTANICAL GARDEN OF UKRAINE	
<b>Sukhenko V., Miedvedieva N., Sukhenko Yu., Vasuliv V., Palamarchuk I., Mushtruk M., Rozhytska T., Litvinenko A., Boyko Yu.</b> .....	<b>142</b>
QUALITATIVE EVALUATION OF THE MAYONNAISE AND DETERMINE THE BEST MANUFACTURER	
<b>Svydenko L., Vergun O., Schubertová Z., Brindza J., Mareček J., Ivanišová E.</b> .....	<b>143</b>



CONTENT OF POLYPHENOL COMPOUNDS IN ETHANOL EXTRACTS OF <i>NEPETA GRANDIFLORA</i> M. BIEB. <b>Tamrazov T.</b> .....	144
EFFECT OF WATER STRESS ON PHYSIOLOGICAL AND GENETIC PARAMETERS AT ANTHESIS STAGE IN WINTER WHEAT GENOTYPES DIFFERING BY MATURITY <b>Varbanets L., Gudzenko O.</b> .....	145
PROPERTIES OF MICROBIAL $\alpha$ -L-RHAMNOSIDASES IMPROVING THE AROMA OF WINES AND TASTE OF JUICES <b>Velychko S., Brovarskiy V., Brindza J.</b> .....	146
INDUSTRIAL RECEIVING OF BEE BREAD IN BEEKEEPING COMMUNITIES <b>Vergun O., Shymanska O., Rakhmetov D., Fishchenko V., Bondarchuk O., Rakhmetova S.</b> .....	147
BIOCHEMICAL COMPOSITION OF FOUR SPECIES OF <i>CRAMBE</i> L. <b>Vergun O., Shymanska O., Rakhmetov D., Fishchenko V., Bondarchuk O., Rakhmetova S.</b> .....	148
CONTENT OF PHOTOSYNTHETIC PIGMENTS IN THE LEAVES OF <i>CRAMBE</i> L. SPECIES <b>Vinogradova Yu., Ganina A., Vergun O.</b> .....	149
POSSIBILITY OF USING ALIEN <i>ADENOCAULON ADHAERESCENS</i> MAXIM. (ASTERACEAE) AS THE MEDICINE PLANT <b>Vinogradova Yu., Vergun O., Grygorieva O., Brindza J.</b> .....	150
ANTIOXIDANT ACTIVITY OF ALIEN <i>GALINSOGA</i> SPECIES <b>Yaroshko O., Morgun B., Velykozho L., Kuchuk M.</b> .....	151
'FLORAL-DIP' GENETIC TRANSFORMATION OF <i>AMARANTHUS CAUDATUS</i> L. WITH HETEROLOGOUS GENES <b>Yavorska N., Vorobets N.</b> .....	152
PHOTOSYNTHETIC PIGMENTS OF <i>VACCINIUM CORYMBOSUM</i> L. (CV. ELLIOTT) SHOOTS: CONTENT AND PERSPECTIVE OF USAGE <b>Yoncheva T.</b> .....	153
INFLUENCE OF THE FERMENTATION CONDITIONS ON THE PHENOLIC COMPOUNDS CONTENT, ANTHOCYANINS, AND THE SPECTRAL CHARACTERISTICS OF CABERNET SAUVIGNON WINES <b>Zhabrovets Yu., Kustovska A., Grygorieva O.</b> .....	154
PHENOLOGICAL GROWTH STAGES OF THE <i>DIOSPYROS VIRGINIANA</i> L. <b>Zhurba M.</b> .....	155
MORPHOMETRIC PARAMETERS OF GENOTYPES OF <i>LYCIUM CHINENSE</i> MILL. IN COLLECTION OF M.M. GRYSHKO NATIONAL BOTANICAL GARDEN OF NAS OF UKRAINE <b>Žiarovská J., Fernández E., Zamiešková L., Montero-Torres J., Romero-Ortega S., Pozzo T., Bezáková J.</b> .....	156
ANALYSIS OF PEANUT GERMPLASM VARIABILITY BY LENGTH POLYMORPHISM AMONG THE PBS SITES OF RETROTRANSPOSONS <b>Žiarovská J., Ražná K., Štefúnová V.</b> .....	157
ANALYSIS OF SELECTED DROUGHT-TOLERANCE GENES IN ALADIN AND SELADON WHEAT CULTIVARS	

#### ABSTRACT ONLY

<b>Aboimova O., Klymenko Yu., Levon V.</b> .....	159
<i>CARYA ILLINOINENSIS</i> WANGH. IN FOREST-STEPPE OF UKRAINE: INTRODUCTION AND PROSPECTS OF USE	
<b>Al Hamadeni H., Zhmurko V.</b> .....	160
INFLUENCE OF PHOTOPERIODIC INDUCTION ON THE CONTENT OF PROTEIN IN SOYBEAN ( <i>GLYCINE MAX</i> (L.) MERR.) GRAIN	
<b>Belokurova V., Lystvan K., Volga D., Vasylenko M., Kuchuk M.</b> .....	161
<i>IN VITRO</i> CONSERVATION, MASS PROPAGATION AND SOME BIOCHEMICAL CHARACTERISTICS OF <i>FITTONIA ALBIVENIS</i> (LINDL. EX VEITCH) BRUMMITT, AN ACANTHACEAE SPECIES	
<b>Borovskaia A., Mascenco N., Ivanova R., Shpak L.</b> .....	162
IMPACT OF PLANTS SECONDARY METABOLITES ON CABBAGE PRODUCTIVITY	

<b>Bulko O., Lioshyna L.</b> .....	163
SCORZONERA HISPANICA L. – PROMISING BIOTECH CULTURE	
<b>Corlateanu L., Ganea A., Maslobrod S.</b> .....	164
MILLIMETER RADIATION AS A FACTOR INCREASING VIABILITY OF COLLECTION ACCESSIONS OF MEDICINAL PLANTS UNDER <i>EX SITU</i> CONSERVATION	
<b>Dudchenko V., Petkevich Z., Shpak D., Palamarchuk D.</b> .....	165
COLLECTION OF SAMPLES OF <i>ORYZA SATIVA</i> L. AS A SOURCE OF VALUABLE TRAITS IN BREEDING FOR PRODUCTIVITY AND ADAPTABILITY	
<b>Ershova I.</b> .....	166
FEATURES OF BIOCHEMICAL COMPOSITION OF HONEYSUCKLE FRUITS OF THE ALTAI REGION	
<b>Gasimova A.</b> .....	167
FUNCTIONAL PRODUCTS ARE A GUARANTEE OF HEALTH	
<b>Gavryliuk O.</b> .....	168
PROBLEMATIC ASPECTS OF BEEKEEPING AS A CONSOLIDATED PRESERVATION OF BIOLOGICAL DIVERSITY OF UKRAINE	
<b>Grabovska T.</b> .....	169
SUPERFAMILY <i>APOIDEA</i> IN ORGANIC AGROLANDSCAPES OF WINTER WHEAT	
<b>Grygorieva O., Klymenko S., Vinogradova Yu., Brindza J.</b> .....	170
VARIATIONS IN SEEDS MORPHOMETRICAL CHARACTERS OF <i>DIOSPYROS LOTUS</i> L.	
<b>Havryliuk O., Kondratenko T.</b> .....	171
SPECIFICS OF THE ASSIMILATION SURFACE OF COLUMNAR APPLE-TREE	
<b>Hrytsyna M., Skybitska M., Salamon I.</b> .....	172
MORPHOLOGICAL AND ANATOMICAL FEATURES OF LEAVES STRUCTURE SPECIES OF GENUS <i>THYMUS</i> L., INTRODUCED IN BOTANICAL GARDEN OF IVAN FRANKO NATIONAL UNIVERSITY OF LVIV	
<b>Ilyinska A.</b> .....	173
DIVERSIFICATION OF TRICHOMES OF CRUCIFEROUS PLANTS (BRASSICACEAE BURNETT) OF THE FLORA OF UKRAINE	
<b>Ilyinska A.</b> .....	174
LIFE FORMS OF BRASSICACEAE BURNETT SPECIES OF THE FLORA OF UKRAINE	
<b>Kharkhota L., Vinogradova E.</b> .....	175
COLLECTION OF THE GENUS <i>CORYLUS</i> L. IN THE DONETSK BOTANICAL GARDEN	
<b>Kosogolova L., Yablonska K.</b> .....	176
DEVELOPMENT OF WAYS TO INCREASE THE CONTENT OF FLAVONOIDS OF DANDELION EXTRACT	
<b>Kostruba T., Chorna G.</b> .....	177
ORNAMENTAL HERBACEOUS INTRODUCENTS OF ERGASIOPHYTES RIGHT-BANK FOREST-STEPPE OF UKRAINE	
<b>Krasnenkova I., Ivannikov R.</b> .....	178
MORPHOLOGICAL AND ANATOMICAL FEATURES OF LEAVES OF <i>CYPRIPEDIOIDEAE</i>	
<b>Levon V.</b> .....	179
CONTENT OF IRIDOIDS IN THE FRUITS OF <i>LONICERA CAERULEA</i> L.	
<b>Lioshyna L., Bulko O.</b> .....	180
EFFECTS OF DIFFERENT LED LIGHTING ON GROWTH AND NUTRITIONAL QUALITY OF LETTUCE ( <i>LACTUCA SATIVA</i> L.)	
<b>Mamedova A., Aliyev R., Hajiyeve E.</b> .....	181
ASSESSMENT OF DROUGHT RESISTANCE AND ECONOMICALLY VALUABLE SIGNS OF YIELD OF COLLECTION OF COTTON VARIETIES	
<b>Mashchenko N., Rusu M., Gurev A.</b> .....	182
INFLUENCE OF FLAVONOIDS FROM <i>VERBASCUM PHLOMOIDES</i> L. ON THE HORMONAL STATUS OF PEARS	
<b>Nalbandyan A., Fedulova T.</b> .....	183
VARIATION IN FUSARIOSE RESISTANCE GENES OF <i>BETA VULGARIS</i> L. GENETIC RESOURCES	
<b>Nochvina O., Mizerna N.</b> .....	184
FORGOTTEN OR PROMISING: THE POPULARITY OF ASPARAGUS IS ON THE INCREASE	

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<b>Pokotylo O., Pereklita M., Kopchak N.</b> .....	<b>185</b>
'DUOLIFE DAY' AND 'DUOLIFE NIGHT' – SYNERGIC PLANTS COMPLEXES OF CHRONOBIOTICS	
<b>Savcenko A., Baerle A.</b> .....	<b>186</b>
STATE OF CARTHAMIN IN WATER AND STEAM EXTRACTS OF SAFFLOWER ( <i>CARTHAMUS TINCTORIUS</i> L.) PETALS	
<b>Tryhub O.</b> .....	<b>187</b>
BUCKWHEAT AS AN IMPORTANT PART FOR ORGANIC AGRICULTURE AND AGRO-BIODIVERSITY	
<b>Vargach Ju.</b> .....	<b>188</b>
ANTIOXIDANT ACTIVITY OF GRAINS OF OATS IN THE NON-CHERNOZEM ZONE OF THE CENTRAL REGION OF RUSSIAN FEDERATION	
<b>Zhabrovets Yu., Kustovskiy Ye., Kustovska A., Grygorieva O., Schubertová Z.</b> .....	<b>189</b>
AMINO ACID COMPOSITION OF LEAVES, FRUITS, SEEDS AND CALYX OF AMERICAN PERSIMMON ( <i>DIOSPYROS VIRGINIANA</i> L.)	
<b>Ochkolias, O.</b> .....	<b>190</b>
INFLUENCE OF ALGAE ON THE CHANGE OF BUTTER QUALITY INDICATORS	
<b>Vorobets N., Yavorska H., Svydenko L., Vorobets, Z.</b> .....	<b>191</b>
ESSENTIAL OILS OF LAVANDINS AND THEIR ANTI-CANDIDA ACTIVITY	
<b>Lietava, J.</b> .....	<b>192</b>
THERAPEUTICAL EFFECT OF <i>CORNUS MAS</i> L. FRUITS IN HUMAN MEDICAL PRACTICE	



**PHENOLOGICAL GROWTH STAGES OF THE *DIOSPYROS VIRGINIANA* L.****Yulia Zhabrovets<sup>1</sup>, Alla Kustovska<sup>1</sup>, Olga Grygorieva<sup>2</sup>**<sup>1</sup>National Pedagogical Dragomanov University, Kyiv, Ukraine; E-mail: additive@ukr.net<sup>2</sup>M.M. Gryshko National Botanical Garden of the National Academy of Sciences of Ukraine, Kyiv, Ukraine

Species of the genus *Diospyros* spp. belong to the family Ebenaceae Gürke. In Europe, the considerable interest of national economy to constitute such kinds of as: *Diospyros kaki* L. (Japanese persimmon) and *Diospyros virginiana* L. (American persimmon), fruit plants as food, *Diospyros lotus* L. (Date plum) – as rootstock, *Diospyros virginiana* – as a rootstock and as a source of high winter hardiness at the hybridization. The natural range of *Diospyros virginiana* includes the eastern part of North America from Connecticut to Iowa and from Kansas to Florida. Today more than 200 cultivars of *Diospyros virginiana* exist and their fruits have differences in fruits shape, size, color, and ripening. The *Diospyros virginiana* is of great practical interest for fruit growing. In addition, the American persimmon is a valuable decorative and medicinal plant. For the last years was derived good cultivars of *Diospyros virginiana* and some of them are superior the best cultivars of *Diospyros kaki*.

Climate change and other adverse global factors in each region have a significant effect on the cultivation of plant species. It is, therefore, necessary to gradually introduce and test the adaptation of less-known and less-used plant species for different practical uses in each region. In Ukraine conditions, the *Diospyros virginiana* is being tested for a longer period of time. In order to recognize the adaptation of each species, it is necessary to know, inter alia the phenology of the species.

The aim of the study was the determination of the main phenological growth stages of *Diospyros virginiana* in the conditions of M.M. Gryshko National Botanical Garden of NAS of Ukraine (Kyiv). For the study of the issue, we used 12 individuals produced in the Botanical Garden. Experimental data gained in years 2018–2019 in phenological studies of *Diospyros virginiana* were utilized to describe phenological growth stages of given species. For the description of phenological growth stages, it was used by BBCH Monograph (1997). Phenological observations and time data collection were provided at regular intervals in the text form and photo documentation. Complex phenological growth stages were processed based on the phenological records. Resulting data will be used for the list of descriptors preparation specified for the given species and oriented on the practical utilization in the research, breeding, and genetic resources investigation. A feature of the system is that homologous stages of different crops are presented by the same codes.

This study made it possible to accurately identify and describe the phenological stages of perspiration growth of *Diospyros virginiana* from the growth bud development (stage 0) and ending with the senescence. Beginning of dormancy (stage 9). The stage of bud development (stage 0) and the stage of inflorescence emergence (stage 5) are described most fully. This makes it possible to use the advantages of the extended BBCH scale to describe the fruit crops for further research.

**Keywords:** *Diospyros virginiana*, BBCH-code, growth stage.

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