

Charakteristika predkladaného výstupu tvorivej činnosti / Characteristics of the submitted research/ artistic/other output

Tlačivo VTC slúži na predkladanie výstupov tvorivej činnosti podľa metodiky hodnotenia tvorivých činností (časť V. Metodiky na vyhodnocovanie štandardov) / The form is used to submit the research/artistic/other outputs according to the evaluation methodology of research/artistic/other activities (part V. The Methodology for Standards Evaluation).

ID konania/ID of the procedure: ¹

Kód VTC/Code of the
research/artistic/other output (RAOO):¹

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person ²	Moravčíková
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person ²	Jana
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person ²	Doc. Ing. PhD
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff ³	https://www.portalvs.sk/regzam/detail/30492
OCA5. Oblasť posudzovania / Area of assessment ⁴	4. Biotechnológie/Biotechnology
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output <i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>	Vedecký výstup/ scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output	2022
OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) ⁵	ID: UKF.Nitra.24078
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA ⁶	https://app.crep.sk/?fn=detailBiblioFormChildCCH24&sid=D4E1A2C7A0DFD9B77EA2CC5BD7A&seo=CREP%C4%8C-detail-%C4%8C%C3%A1nok
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA	OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs ⁷
	OCA11. Charakteristika výstupu vo formáte bibliografického záznamu CREPČ alebo CREUČ, ak výstup nie je vo verejne prístupnom registri alebo katalógu výstupov / Characteristics of the output in the format of the CRPA or the CRAA bibliographic record, if the output is not available in a publicly accessible register or catalogue of outputs
	OCA12. Typ výstupu (ak nie je výstup registrovaný v CREPČ alebo CREUČ) / Type of the output (if the output is not registered in CRPA or CRAA) <i>Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).</i>
	Článok/article

	OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.)	https://www.frontiersin.org/articles/10.3389/fpls.2022.968982/full
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	[8,334%] uskutočňovanie experimentov / conducting experiments
	OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. <i>⁸Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>⁹Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	
	OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English <i>⁹Rozsah do 200 slov / Range up to 200 words</i>	In Norway spruce, as in many other conifers, the germination capacity of somatic embryos is strongly influenced by the desiccation phase inserted after maturation. The intensity of drying during desiccation eminently affected the formation of emblings (i.e., seedlings developed from somatic embryos). Compared to non-desiccated embryos, the germination capacity of embryos desiccated at 100% relative humidity was about three times higher, but the reduction of relative humidity to 95 and 90% had a negative effect on the subsequent embryo development. The water loss observed in these embryos did not lead to an increase in lipid peroxidation, as shown by malondialdehyde levels. Another metabolic pathway in plants that mediates a response to abiotic stresses is directed toward the biosynthesis of polyamines (PAs). The activities of PA biosynthetic enzymes increased steadily in embryos during desiccation at 100% relative humidity, whereas they decreased at lower humidity. The total content of free PAs in the embryos gradually decreased throughout desiccation. The increase in free putrescine (Put) and perchloric acid-insoluble Put conjugates was observed in embryos desiccated at lower humidity. These changes were accompanied to some extent by the transcription of the genes for the PA biosynthesis enzymes. Desiccation at 100% relative humidity increased the activity of the cell wall-modifying enzymes β-1,3-glucanases and chitinases; the activities of these enzymes were also significantly suppressed at reduced humidity. The same pattern was observed in the transcription of some β-1,3-glucanase and chitinase genes. Desiccation treatments triggered metabolic processes that responded to water availability, suggesting an active response of the embryo to the reduction in humidity. A positive effect was demonstrated only for desiccation at high relative humidity. Some of the physiological characteristics described can be used as markers of inappropriate relative humidity during somatic embryo desiccation.
	OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output <i>Rozsah do 200 slov / Range up to 200 words</i>	
	OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Práca je zameraná na štúdium možných indikátorov osmotického stresu pri desikácii somatických embryí smreka obyčajného pri zníženej vlhkosti a jeho vplyvu na klíčenie. Analýzy ukázali, že vysušenie pri vysokej relatívnej vlhkosti podporilo klíčenie somatických embryí smreka obyčajného, zvýšilo aktivity ADC a ODC, aktivity β-1,3-glukanáz a transkripciu génov β-1,3-glukanázy a chitinázy triedy IV. Vystavenie zreých somatických embryí zníženým hladinám vlhkosti viedlo k stresom vyvolaným zmenám v homeostáze PA, ako aj obsahu ABA a jej metabolitov. Adaptácia embryí vysušených pri zníženej relatívnej vlhkosti viedla k zmenám v obsahu voľných, konjugovaných a viazaných foriem PA. Vysoká miera dehydratácie embryí vyvolala významné zvýšenie obsahu voľného Put, hoci aktivity ADC a ODC klesli, čo spolu s prudkým poklesom obsahu voľného Spm indikovalo rekonverziu voľného Spm. Nárast viazaných PA bol vyvolaný adaptáciou na vážny deficit vody (90% relatívna vlhkosť), čo potvrdzuje úlohu PA pri posilňovaní bunkovej steny v podmienkach environmentálneho stresu. Vysušenie pri nízkej vlhkosti tiež výrazne potlačilo aktivity enzýmov β-1,3-glukanáz a chitináz modifikujúcich bunkovú stenu, ako aj expresiu génov β-1,3-glukanázy a chitinázy triedy IV. Väčšina sledovaných enzýmových aktivít bola dočasne utlmená nízkou relatívnou vlhkosťou, ale po odznení podmienok nedostatku vody sa obnovila.

	Zdá sa, že vysychanie pri nižšej relatívnej vlhkosti bráni procesom vedúcim k fyziologickej zrelosti a následnej schopnosti embryí vyvinúť sa./ The work is focused on the study of possible indicators of osmotic stress during desiccation of somatic embryos of Norway spruce at reduced humidity and its effect on germination. Analyses showed that desiccation at high relative humidity promoted germination of Norway spruce somatic embryos, increased the activities of ADC and ODC, the activities of β-1,3-glucanases and transcription of β-1,3-glucanase and class IV chitinase genes. Exposure of matured somatic embryos to decreased humidity levels resulted in stress-induced changes in PA homeostasis as well as the content of ABA and its metabolites. The adaptation of embryos desiccated at reduced relative humidity resulted in changes in the content of free, conjugated, and bound forms of PAs. A high rate of embryo dehydration elicited a significant increase in the content of free Put, although the activities of ADC and ODC decreased, which together with a sharp decrease in the content of free Spm indicated reconversion of free Spm. The increase in bound PAs was triggered by adaptation to a severe water deficit (90% relative humidity), confirming the role of PAs in strengthening the cell wall under environmental stress conditions. Low-humidity desiccation also markedly suppressed the activities of cell wall-modifying enzymes β-1,3-glucanases and chitinases, as well as the expression of β-1,3-glucanase and class IV chitinase genes. Most of the monitored enzyme activities were temporarily attenuated by low relative humidity but were restored after the water deficit conditions passed away. Desiccation at lower relative humidity appears to impede the processes leading to physiological maturity and subsequent ability of the embryos to develop into seedlings.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výstup je orientovaný na rastlinné biotechnológie a je viazaný na výučbu biotechnologických predmetov v rámci študijného programu Biotechnológie. Do vzdelávacieho procesu budú z tohto výstupu implementované poznatky, skúsenosti a výsledky. Dopady sa prejavujú vo výučbe predmetov s biotechnologickým a biologickým obsahom./ The output is focused on plant biotechnology and is linked to the teaching of biotechnology courses within the study program Biotechnology. From this output, knowledge, experience, and results will be implemented into the educational process. Impacts will be reflected in the teaching of subjects with biotechnological and biological contents.

Charakteristika predkladaného výstupu tvorivej činnosti / Characteristics of the submitted research/ artistic/other output

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OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff ³	https://www.portalvs.sk/regzam/detail/30492
OCA5. Oblasť posudzovania / Area of assessment ⁴	4. Biotechnológie/Biotechnology
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output <i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>	Vedecký výstup/ scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output	2015
OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) ⁵	http://www.crepc.sk/portal?fn=*review&uid=1715106&pagelid=resultform&full=0
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA ⁶	
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA	OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs ⁷
	OCA11. Charakteristika výstupu vo formáte bibliografického záznamu CREPČ alebo CREUČ, ak výstup nie je vo verejne prístupnom registri alebo katalógu výstupov / Characteristics of the output in the format of the CRPA or the CRAA bibliographic record, if the output is not available in a publicly accessible register or catalogue of outputs
	OCA12. Typ výstupu (ak nie je výstup registrovaný v CREPČ alebo CREUČ) / Type of the output (if the output is not registered in CRPA or CRAA) <i>Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).</i>
	Článok/article

	OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.) OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. ⁸Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak ⁹Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English	https://link.springer.com/article/10.1007/s00299-014-1726-0 [40 %] korešpondenčný autor, návrh experimentov, písanie článku/ author for correspondence, experiment design, article writing
	OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English ⁹Rozsah do 200 slov / Range up to 200 words	We studied the feasibility of the pollen- and embryo-specific <i>DLL</i> promoter of the <i>At4g16160</i> gene from <i>Arabidopsis thaliana</i> in a <i>Cre/loxP</i> self-excision strategy. A <i>Cre/loxP</i> self-excision cassette controlled by the <i>DLL</i> promoter was introduced into the tobacco genome via <i>Agrobacterium</i>-mediated transformation. No evidence for premature activation of the <i>Cre/loxP</i> system was observed in primary transformants. The efficiency of <i>nptII</i> removal during pollen and embryo development was investigated in transgenic <i>T</i>₁ progenies derived from eight self- and four cross-pollinated <i>T</i>₀ lines, respectively. Segregation and rooting assays were performed to select recombined <i>T</i>₁ plants. Molecular analyses of these plants confirmed the excision event in all analysed <i>T</i>₀ lines and marker-free transgenic <i>T</i>₁ plants were obtained with efficiency of up to 96.2 %. The <i>Arabidopsis DLL</i> promoter appears to be a strong candidate to drive Cre-mediated recombination not only in tobacco as a model plant, but also in other plant species.
	OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output Rozsah do 200 slov / Range up to 200 words	Record 1 of 3 Title: Improvement of conditional Cre-lox system through application of the regulatory sequences from Cowpea mosaic virus Author(s): opertekh, L (Kopertekh, L.); Krebs, E (Krebs, E.); Guzmán, F (Guzmán, F.) Source: LANT BIOTECHNOLOGY REPORTS Volume: 12 Issue: 2 Pages: 127-137 DOI: 10.1007/s11816-018-0477-8 Published: APR 2018 Times Cited in Web of Science Core Collection: 2 Total Times Cited: 2 Accession Number: WOS:000430381000007 ISSN: 1863-5466 eISSN: 1863-5474 Record 2 of 3 Title: Cold inducible promoter driven Cre-lox system proved to be highly efficient for marker gene excision in transgenic barley Author(s): , Eva, C (Eva, Csaba); Teglas, F (Teglas, Flora); Zelenyanszki, H (Zelenyanszki, Helga); Tamas, C (Tamas, Cecilia); Juhasz, A (Juhasz, Angela); Meszaros, K (Meszaros, Klara); Tamas, L (Tamas, Laszlo) Source: JOURNAL OF BIOTECHNOLOGY Volume: 265 Pages: 15-24 DOI: 10.1016/j.jbiotec.2017.10.016 Published: JAN 10 2018 Times Cited in Web of Science Core Collection: 8 Total Times Cited: 9 Accession Number: WOS:000418596500003 ISSN: 0168-1656 eISSN: 1873-4863 Record 3 of 3 Title: Visible marker excision via heat-inducible Cre/LoxP system and lpt selection in tobacco Author(s): Zheng, Y (Zheng, Yu); Pan, Y (Pan, Yu); Li, JH (Li, Jinghua); Zhou, Y (Zhou, You); Pan, YL (Pan, Yanglu); Ding, YM (Ding, Yumei); Su, CG (Su, Chenggang); Zhang, XG (Zhang, Xingguo)

	Source: IN VITRO CELLULAR & DEVELOPMENTAL BIOLOGY-PLANT Volume: 52 Issue: 5 Pages: 492-499 DOI: 10.1007/s11627-016-9775-4 Published: OCT 2016 Times Cited in Web of Science Core Collection: 3 Total Times Cited: 3 Accession Number: WOS:000386626100004 ISSN: 1054-5476 eISSN: 1475-2689
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Práca nadväzuje na predchádzajúce výsledky Moravčíková et al. (2008) a Boszorádová et al. (2014) týkajúce sa prípravy transgénnych rastlín bez selekčných markerových génov pomocou Cre/loxP stratégie. Študovali sme efektívnosť odstránenia selekčného markerového génu pomocou Cre rekombinázy riadenej promótorom DLL z <i>Arabidopsis thaliana</i>, ktorý bol aktívnym počas vývinu peľu a embrya. Molekulárne analýzy potvrdili odstránenie selekčného markerového génu s účinnosťou 96,2%. Promótor DLL sa ukazuje ako silný kandidát na riadenie excízie pomocou Cre/loxP systému nielen v modelovej rastline tabaku, ale aj v iných rastlinných druhoch. Výsledky práce prispievajú k problematike biobezpečnosti transgénnych rastlín a majú potenciál uplatniť sa pri príprave transgénnych rastlín určených do komerčného prostredia./ The work builds on previous results Moravčíková et al. (2008) and Boszorádová et al. (2014) concerning the preparation of transgenic plants without selection marker genes using the Cre / loxP strategy. We studied the efficiency of removal of the selectable marker gene using the Cre recombinase driven by the Arabidopsis thaliana DLL promoter, which was active during pollen and embryo development. Molecular analyzes confirmed the removal of the selection marker gene with an efficiency of 96.2%. The DLL promoter has been shown to be a strong candidate for excision control using the Cre / loxP system not only in the tobacco model plant but also in other plant species. The results of the work contributed to the issue of biosafety of transgenic plants and have the potential to be used in the preparation of transgenic plants intended for the commercial environment.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výstup je orientovaný na rastlinné biotechnológie a je viazaný na výučbu biotechnologických predmetov v rámci študijného programu Biotechnológie. Do vzdelávacieho procesu budú z tohto výstupu implementované poznatky, skúsenosti a výsledky z prípravy biobezpečných transgénnych rastlín. Dopady sa prejavujú vo výučbe predmetov s biotechnologickým a biologickým obsahom./ The output is focused on plant biotechnology and is linked to the teaching of biotechnology courses within the study program Biotechnology. From this output, knowledge, experience, and results from the preparation of biosafe transgenic plants will be implemented into the educational process. Impacts will be reflected in the teaching of subjects with biotechnological and biological contents.

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OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff ³	https://www.portalvs.sk/regzam/detail/30492
OCA5. Oblasť posudzovania / Area of assessment ⁴	4. Biotechnológie/Biotechnology
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output <i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>	Vedecký výstup/ scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output	
OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) ⁵	2014
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA ^{6u}	
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA	OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs ⁷
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	DUBAS, Ewa - MORAVČÍKOVÁ, Jana - LIBANTOVÁ, Jana - MATUŠÍKOVÁ, Ildikó - BENKOVÁ, E. - ZUR, I. - KRZEWSKA, M. The influence of heat stress on auxin distribution in transgenic B-napus microspores and microspore-derived embryos. In Protoplasma, 2014, vol. 251, no. 5, p.1077-1087. (2013: 3.171 - IF, Q1 - JCR, 1.340 - SJR, Q1 - SJR, karentované - CCC). (2014 - Current Contents). ISSN 0033-183X. https://doi.org/10.1007/s00709-014-0616-1 Type: ADCA
	Článok/article

	OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.)	https://link.springer.com/article/10.1007/s00709-014-0616-1
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	[14 %] navrhovanie experimentov, uskutočňovanie experimentov, písanie článku/ experiments design, conducting experiments, writing the article
	OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. ⁸ Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak ⁹ Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English	
	OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English ⁹ Rozsah do 200 slov / Range up to 200 words	Plant embryogenesis is regulated by differential distribution of the plant hormone auxin. However, the cells establishing these gradients during microspore embryogenesis remain to be identified. For the first time, we describe, using the DR5 or DR5rev reporter gene systems, the GFP- and GUS-based auxin biosensors to monitor auxin during <i>Brassica napus</i> androgenesis at cellular resolution in the initial stages. Our study provides evidence that the distribution of auxin changes during embryo development and depends on the temperature-inducible in vitro culture conditions. For this, microspores (mcs) were induced to embryogenesis by heat treatment and then subjected to genetic modification via <i>Agrobacterium tumefaciens</i>. The duration of high temperature treatment had a significant influence on auxin distribution in isolated and in vitro-cultured microspores and on microspore-derived embryo development. In the “mild” heat-treated (1 day at 32 °C) mcs, auxin localized in a polar way already at the uni-nucleate microspore, which was critical for the initiation of embryos with suspensor-like structure. Assuming a mean mcs radius of 20 µm, endogenous auxin content in a single cell corresponded to concentration of 1.01 µM. In mcs subjected to a prolonged heat (5 days at 32 °C), although auxin concentration increased dozen times, auxin polarization was set up at a few-celled pro-embryos without suspensor. Those embryos were enclosed in the outer wall called the exine. The exine rupture was accompanied by the auxin gradient polarization. Relative quantitative estimation of auxin, using time-lapse imaging, revealed that primordia possess up to 1.3-fold higher amounts than those found in the root apices of transgenic MDEs in the presence of exogenous auxin. Our results show, for the first time, which concentration of endogenous auxin coincides with the first cell division and how the high temperature interplays with auxin, by what affects delay early establishing microspore polarity. Moreover, we present how the local auxin accumulation demonstrates the apical–basal axis formation of the androgenic embryo and directs the axiality of the adult haploid plant.
	OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output ⁹ Rozsah do 200 slov / Range up to 200 words	Record 1 of 5 Title: Microspore embryogenesis: targeting the determinant factors of stress-induced cell reprogramming for crop improvement Author(s): Testillano, PS (Testillano, Pilar S.) Source: JOURNAL OF EXPERIMENTAL BOTANY Volume: 70 Issue: 11 Pages: 2965-2978 DOI: 1093/jxb/ery464 Published: MAY 15 2019 Times Cited in Web of Science Core Collection: 8 Total Times Cited: 8 Accession Number: WOS:000481430400004 PubMed ID: 30753698 ISSN: 0022-0957 eISSN: 1460-2431 Record 2 of 5 Title: Auxin Biosynthesis, Accumulation, Action and Transport are Involved in Stress-Induced Microspore Embryogenesis Initiation and Progression in <i>Brassica napus</i> Author(s): Rodriguez-Sanz, H (Rodriguez-Sanz, Hector); Solis, MT (Solis, Maria-Teresa) ; Lopez, MF (Lopez, Maria-Fernanda) ; Gomez-Cadenas, A

	(Gomez-Cadenas, Aurelio); Risueno, MC (Risueno, Maria C.) ; Testillano, PS (Testillano, Pilar S.) Source: PLANT AND CELL PHYSIOLOGY Volume: 56 Pages: 1401-1417 DOI: 10.1093/pcp/pcv058 Published: JUL 2015 Times Cited in Web of Science Core Collection: 20 Total Times Cited: 20 Accession Number: WOS:000359648900015 ISSN: 0032-0781 PubMed ID: 25907568 eISSN: 1471-9053 Record 3 of 5 Title: Improved microspore embryogenesis induction and plantlet regeneration using putrescine, cefotaxime and vancomycin in <i>Brassica napus</i> L. Author(s): Ahmadi, B (Ahmadi, Behzad); Shariatpanahi, ME (Shariatpanahi, Mehran E.); Ojaghkandi, MA (Ojaghkandi, Mehdi Aghapour); Heydari, AA (Heydari, Ali Akbar) Source: PLANT CELL TISSUE AND ORGAN CULTURE Volume: 118 Issue: 3 Pages: 497-505 DOI: 10.1007/s11240-014-0501-9 Published: SEP 2014 Times Cited in Web of Science Core Collection: 16 Total Times Cited: 16 Accession Number: WOS:000340565400012 ISSN: 0167-6857 eISSN: 1573-5044 Record 4 of 5 Title: Microspore embryogenesis in <i>Brassica</i>: calcium signaling, epigenetic modification, and programmed cell death Author(s): Ahmadi, B (Ahmadi, Behzad); Ahmadi, M (Ahmadi, Medya); da Silva, JAT (da Silva, Jaime A. Teixeira) Source: PLANTA Volume: 248 Issue: 6 Pages: 1339-1350 DOI: 10.1007/s00425-018-2996-5 Published: DEC 2018 Times Cited in Web of Science Core Collection: 6 Total Times Cited: 6 Accession Number: WOS:000450563300001 ISSN: 0032-0935 eISSN: 1432-2048 PubMed ID: 0171331 Record 5 of 5 Title: Live Imaging of embryogenic structures in <i>Brassica napus</i> microspore embryo cultures highlights the developmental plasticity of induced totipotent cells Author(s): Corral-Martinez, P (Corral-Martinez, Patricia); Siemons, C (Siemons, Charlotte); Horstman, A (Horstman, Anneke); Angenent, GC (Angenent, Gerco C.); de Ruijter, N (de Ruijter, Norbert); Boutilier, K (Boutilier, Kim) Source: PLANT REPRODUCTION DOI: 10.1007/s00497-020-00391-z Early Access Date: JUL 2020 Times Cited in Web of Science Core Collection: 0 Total Times Cited: 0 Accession Number: WOS:000547244200001 PubMed ID: 32651727 ISSN: 2194-7953 eISSN: 2194-7961
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English	Pomocou transgenózy systémom auxín-responzívny promótor/reportérový gén sme študovali distribúciu rastlinného hormónu auxínu v počiatočných štádiách androgenézy <i>Brassica napus</i> L.. Naše výsledky po prvý raz ukázali, že koncentrácia endogénneho auxínu súvisí s prvým bunkovým delením, a že vysoká teplota interferuje s auxínom, čo ovplyvňuje oneskorenie polarizácie mikrospór. V práci je ukázané ako lokálna akumulácia auxínu ovplyvňuje formovanie apikálno-bazálnej osi androgénneho embrya a usmerňuje axialitu dospelých haploidných rastlín. Práca rozširuje poznatky týkajúce sa androgenézy a prípravy haploidných rastlín, ktoré môžu byť využité pri rastlinných druhov, ktoré sú rekalcitrantné k androgenéze. Získané poznatky sú využiteľné pre šľachtiteľskú prax./ Using transgenesis with an auxin-responsive promoter/reporter gene system, we studied the distribution of the plant hormone auxin in the early stages of androgenesis of <i>Brassica napus</i> L. Our results showed for the first time that endogenous auxin levels are associated with first cell division and that high

	temperature which affects the delay of microspore polarization. The work shows how the local accumulation of auxin affects the formation of the apical-basal axis of the androgenic embryo and directs the axuality of adult haploid plants. The work expands the knowledge about androgenesis and preparation of haploid plants, which can be used in plant species that are recalcitrant for androgenesis. The acquired knowledge can be used for breeding practice.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výstup je orientovaný na rastlinné biotechnológie a je viazaný na výučbu biotechnologických predmetov v rámci študijného programu Biotechnológie. Do vzdelávacieho procesu budú z tohto výstupu implementované poznatky, skúsenosti a výsledky z androgenézy rastlín. Dopady sa prejavujú vo výučbe predmetov s biotechnologickým a biologickým obsahom./ The output is focused on plant biotechnology and is linked to the teaching of biotechnology courses within the study program Biotechnology. From this output, knowledge, experience, and results from plant androgenesis will be implemented into the educational process. Impacts will be reflected in the teaching of subjects with biotechnological and biological contents.

Charakteristika predkladaného výstupu tvorivej činnosti / Characteristics of the submitted research/ artistic/other output

Tlačivo VTC slúži na predkladanie výstupov tvorivej činnosti podľa metodiky hodnotenia tvorivých činností (časť V. Metodiky na vyhodnocovanie štandardov) / The form is used to submit the research/artistic/other outputs according to the evaluation methodology of research/artistic/other activities (part V. The Methodology for Standards Evaluation).

ID konania/ID of the procedure: ¹
Kód VTC/Code of the
research/artistic/other output (RAOO):¹

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person ²	Moravčíková
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person ²	Jana
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person ²	Doc. Ing. PhD
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff ³	https://www.portalvs.sk/regzam/detail/30492
OCA5. Oblasť posudzovania / Area of assessment ⁴	4. Biotechnológie/Biotechnology
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output <i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>	Vedecký výstup/ scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output	2017
OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) ⁵	ID: UK.Bratislava.vtls000328440
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA ⁶	http://www.crepc.sk/portal?fn=*review&uid=2190583&pageId=resultform&full=0
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA	OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs ⁷
	https://link.springer.com/article/10.1007/s00425-016-2592-5
	OCA11. Charakteristika výstupu vo formáte bibliografického záznamu CREPČ alebo CREUČ, ak výstup nie je vo verejne prístupnom registri alebo katalógu výstupov / Characteristics of the output in the format of the CRPA or the CRAA bibliographic record, if the output is not available in a publicly accessible register or catalogue of outputs
OCA12. Typ výstupu (ak nie je výstup registrovaný v CREPČ alebo CREUČ) / Type of the output (if the output is not registered in CRPA or CRAA) <i>Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).</i>	Článok/article

	OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.)	
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	[15 %] podieľanie sa na experimentoch/participation in experiments
	OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. ⁸ Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English	
	OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English ⁹ Rozsah do 200 slov / Range up to 200 words	Ancestral plant β -1,3-glucanases (EC 3.2.1.39) played a role in cell division and cell wall remodelling, but divergent evolution has extended their roles in plant defense against stresses to decomposition of prey in carnivorous plants. As available gene sequences from carnivorous plants are rare, we isolated a glucanase gene from roundleaf sundew (<i>Drosera rotundifolia</i> L.) by a genome walking approach. Computational predictions recognized typical gene features and protein motifs described for other plant β -1,3-glucanases. Phylogenetic reconstructions suggest strong support for evolutionary relatedness to class V β -1,3-glucanases, including homologs that are active in the traps of related carnivorous species. The gene is expressed in sundew vegetative tissues but not in flowers and digestive glands, and encodes for a functional enzyme when expressed in transgenic tobacco. Detailed analyses of the supposed promoter both in silico and in transgenic tobacco suggest that this glucanase plays a role in development. Specific spatiotemporal activity was observed during transgenic seed germination. Later during growth, the sundew promoter was active in marginal and sub-marginal areas of apical true leaf meristems of young tobacco plants. These results suggest that the isolated glucanase gene is regulated endogenously, possibly by auxin. This is the first report on a nuclear gene study from sundew.
	OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output Rozsah do 200 slov / Range up to 200 words	VTC 15. Zoznam najviac 5 najvýznamnejších ohlasov na výstup Record 1 of 2 Title: Jasmonate-independent regulation of digestive enzyme activity in the carnivorous butterwort <i>Pinguicula</i> x Tina Author(s): Kocab, O (Kocab, Ondrej); Jaksova, J (Jaksova, Jana); Novak, O (Novak, Ondrej); Petrik, I (Petrik, Ivan); Lenobel, R (Lenobel, Rene); Chamrad, I (Chamrad, Ivo); Pavlovic, A (Pavlovic, Andrej) Source: JOURNAL OF EXPERIMENTAL BOTANY Volume: 71 Issue: 12 Pages: 3749-3758 DOI: 10.1093/jxb/eraa159 Published: JUN 22 2020 Times Cited in Web of Science Core Collection: 0 Total Times Cited: 0 Accession Number: WOS:000553121200034 ISSN: 0022-0957 eISSN: 1460-2431 Record 2 of 2 Title: Carnivorous Plants Physiology, ecology, and evolution Preface Author(s): Ellison, AM (Ellison, Aaron M.); Adamec, L (Adamec, Lubomir) Edited by: Ellison AM; Adamec L Source: CARNIVOROUS PLANTS: PHYSIOLOGY, ECOLOGY, AND EVOLUTION Pages: XXIII-+ Published: 2018 Times Cited in Web of Science Core Collection: 0 Total Times Cited: 0 Accession Number: WOS:000441281500001 ISBN: 978-0-19-877984-1

OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Rastlinné beta-1,3-glukanázy hrajú dôležitú úlohu vo vývinových a fyziologických procesoch a v odpovedi na biotický a abiotický stres. V práci sme izolovali gén pre beta-1,3-glukanázu a sekvenciu jeho promótoru z rosičky okrúhlejšej (<i>Drosera rotundifolia</i> L.). Bioinformatické analýzy izolovanej sekvencie potvrdili typické génové znaky a proteínové motívy charakteristické pre rastlinné beta-1,3-glukanázy. Fylogenetické rekonštrukcie naznačili silnú podporu evolučnej príbuznosti s beta-1,3-glukanázami triedy V, vrátane homológov, ktoré sú aktívne v pasciach príbuzných mäsožravých druhov. Gén je aktívny vo vegetatívnych pletivách rosičky, ale nie v kvetoch a tráviacich žľazách. Podrobné analýzy pomocou systému promótor/reportérový gén v transgénnom tabaku ukázali, že táto glukanáza hrá úlohu počas vývinu. Práca rozširuje poznatky týkajúce sa úlohy glukanáz v mäsožravých rastlinách a izolovaný gén má potenciál pre biotechnologické využitie. / Plant beta-1,3-glucanases play an important role in developmental and physiological processes and in response to biotic and abiotic stress. In this work we isolated the gene for beta-1,3-glucanase and the sequence of its promoter from sundew (<i>Drosera rotundifolia</i> L.). Bioinformatics analyzes of the isolated sequence confirmed the typical gene traits and protein motifs characteristic of plant beta-1,3-glucanases. Phylogenetic reconstructions have indicated strong support for evolutionary relatedness to class V beta-1,3-glucanases, including homologues that are active in the traps of related carnivorous species. The gene is active in sundew vegetative tissues, but not in flowers and digestive glands. Detailed analyzes using the promoter / reporter gene system in transgenic tobacco have shown that this glucanase plays a role during development. The work expands knowledge about the role of glucanases in carnivorous plants and the isolated gene has the potential for biotechnological use.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výstup je orientovaný na rastlinné biotechnológie a je viazaný na výučbu biotechnologických predmetov v rámci študijného programu Biotechnológie. Do vzdelávacieho procesu budú z tohto výstupu implementované poznatky, skúsenosti a výsledky, ktoré sú využiteľné v moderných biotechnológiách. Dopady sa prejavujú vo výučbe predmetov s biotechnologickým a biologickým obsahom. / The output is focused on plant biotechnology and is linked to the teaching of biotechnology courses within the study program Biotechnology. From this output, knowledge, experience, and results that can be used in modern biotechnologies will be implemented into the educational process. Impacts will be reflected in the teaching of subjects with biotechnological and biological contents.

Charakteristika predkladaného výstupu tvorivej činnosti / Characteristics of the submitted research/ artistic/other output

Tlačivo VTC slúži na predkladanie výstupov tvorivej činnosti podľa metodiky hodnotenia tvorivých činností (časť V. Metodiky na vyhodnocovanie štandardov) / The form is used to submit the research/artistic/other outputs according to the evaluation methodology of research/artistic/other activities (part V. The Methodology for Standards Evaluation).

ID konania/ID of the procedure: ¹
Kód VTC/Code of the
research/artistic/other output (RAOO):¹

OCA1. Priezvisko hodnotenej osoby / Surname awarded to the assessed person ²	Moravčíková
OCA2. Meno hodnotenej osoby / Name awarded to the assessed person ²	Jana
OCA3. Tituly hodnotenej osoby / Degrees awarded to the assessed person ²	Doc. Ing. PhD
OCA4. Hyperlink na záznam osoby v Registri zamestnancov vysokých škôl / Hyperlink to the entry of the person in the Register of university staff ³	https://www.portalvs.sk/regzam/detail/30492
OCA5. Oblasť posudzovania / Area of assessment ⁴	4. Biotechnológie/Biotechnology
OCA6. Kategória výstupu tvorivej činnosti / Category of the research/ artistic/other output <i>Výber zo 6 možností (pozri Vysvetlivky k položke OCA6) / Choice from 6 options (see Explanations for OCA6).</i>	Vedecký výstup/ scientific output
OCA7. Rok vydania výstupu tvorivej činnosti / Year of publication of the research/artistic/other output	2021
OCA8. ID záznamu v CREPČ alebo CREUČ (ak je) / ID of the record in the Central Registry of Publication Activity (CRPA) or the Central Registry of Artistic Activity (CRAA) ⁵	ID: 240657
OCA9. Hyperlink na záznam v CREPČ alebo CREUČ / Hyperlink to the record in CRPA or CRAA ⁶	https://app.crepc.sk/?fn=detailBiblioFormChildM16VS2&sid=376FCAEA43ECD92AE16AE3DC06&seo=CREP%C4%8C-detail-%C4%8C%C3%A1nok
Charakteristika výstupu, ktorý nie je registrovaný v CREPČ alebo CREUČ / Characteristics of the output that is not registered in CRPA or CRAA	OCA10. Hyperlink na záznam v inom verejne prístupnom registri, katalógu výstupov tvorivých činností / Hyperlink to the record in another publicly accessible register, catalogue of research/ artistic/other outputs ⁷
	OCA11. Charakteristika výstupu vo formáte bibliografického záznamu CREPČ alebo CREUČ, ak výstup nie je vo verejne prístupnom registri alebo katalógu výstupov / Characteristics of the output in the format of the CRPA or the CRAA bibliographic record, if the output is not available in a publicly accessible register or catalogue of outputs
	OCA12. Typ výstupu (ak nie je výstup registrovaný v CREPČ alebo CREUČ) / Type of the output (if the output is not registered in CRPA or CRAA) <i>Výber zo 67 možností (pozri Vysvetlivky k položke OCA12) / Choice from 67 options (see Explanations for OCA12).</i>
	Článok/article

	OCA13. Hyperlink na stránku, na ktorej je výstup sprístupnený (úplný text, iná dokumentácia a podobne) / Hyperlink to the webpage where the output is available (full text, other documentation, etc.)	https://www.sciencedirect.com/science/article/abs/pii/S016894522030306X?via%3Dihub
	OCA14. Charakteristika autorského vkladu / Characteristics of the author's contribution	[30 %] navrhovanie a podieľanie sa na experimentoch, písanie a editovanie rukopisu / designing and participation on experiments, writing and editing of the manuscript
	OCA15. Anotácia výstupu s kontextovými informáciami týkajúcimi sa opisu tvorivého procesu a obsahu tvorivej činnosti a pod. / Annotation of the output with contextual information concerning the description of creative process and the content of the research/artistic/other activity, etc. ⁸Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak ⁹Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English	
	OCA16. Anotácia výstupu v anglickom jazyku / Annotation of the output in English ⁹Rozsah do 200 slov / Range up to 200 words	The work presents the biochemical, cytochemical and molecular studies on two groups of PR proteins, β-1,3-glucanases and chitinases, and the arabinogalactan proteins (AGP) during the early stages of androgenesis induction in two breeding lines of rye (<i>Secale cereale</i> L.) with different androgenic potential. The process of androgenesis was initiated by tillers pre-treatments with low temperature, mannitol and/or reduced glutathione and resulted in microspores reprogramming and formation of androgenic structures what was associated with high activity of β-1,3-glucanases and chitinases. Some isoforms of β-1,3-glucanases, namely several acidic isoforms of about 26 kDa; appeared to be anther specific. Chitinases were well represented but were less variable. RT-qPCR revealed that the cold-responsive chitinase genes <i>Chit1</i> and <i>Chit2</i> were expressed at a lower level in the microspores and whole anthers while the cold-responsive <i>Glu2</i> and <i>Glu3</i> were not active. The stress pre-treatments modifications promoted the AGP accumulation. An apparent dominance of some AGP epitopes (LM2, JIM4 and JIM14) was detected in the androgenesis-responsive rye line. An abundant JIM13 epitopes in the vesicles and inner cell walls of the microspores and in the cell walls of the anther cell layers appeared to be the most specific for embryogenesis.
	OCA17. Zoznam najviac 5 najvýznamnejších ohlasov na výstup / List of maximum 5 most significant citations corresponding to the output Rozsah do 200 slov / Range up to 200 words	Record 1 of 5 Title: Triticale doubled haploid plant regeneration factors linked by structural equation modeling Author(s): Orlowska, Renata Source: JOURNAL OF APPLIED GENETICS Volume: 63 Issue: 4 Pages: 677-690 DOI: 10.1007/s13353-022-00719-7 Early Access Date: AUG 2022 Published: DEC 2022 ISSN: 1234-1983 eISSN: 2190-3883 Times Cited in Web of Science Core Collection: 2 Accession Number: WOS:000844917100001 PubMed ID: 36018540 Record 2 of 5 Title: Glutathione and copper ions as critical factors of green plant regeneration efficiency of triticale in vitro anther culture Author(s): Bednarek, PT (Bednarek, Piotr T.); Orlowska, R (Orlowska, Renata); Mankowski, DR (Mankowski, Dariusz R.); Zimny, J (Zimny, Janusz); Kowalczyk, K (Kowalczyk, Krzysztof); Nowak, M (Nowak, Michal); Zebrowski, J (Zebrowski, Jacek) Source: FRONTIERS IN PLANT SCIENCE Volume: 13 Article Number: 926305 DOI: 10.3389/fpls.2022.926305 Published: JUL 28 2022 Times Cited in Web of Science Core Collection: 3 Accession Number: WOS:000841026700001 PubMed ID: 35982694 ISSN: 1664-462X Record 3 of 5 Title: Emerging Roles of beta-Glucanases in Plant Development and Adaptive Responses Author(s): Perrot, T (Perrot, Thomas); Pauly, M (Pauly, Markus); Ramirez, V (Ramirez, Vicente)

	Source: PLANTS-BASEL Volume: 11 Issue: 9 Article Number: 1119 DOI: 10.3390/plants11091119 Published: MAY 2022 Times Cited in Web of Science Core Collection: 8 Accession Number: WOS:000794650900001 PubMed ID: 35567119 eISSN: 2223-7747 Record 4 of 5 Title: Androgenesis-Based Doubled Haploidy: Past, Present, and Future Perspectives Author(s): Hale, B (Hale, Brett); Ferrie, AMR (Ferrie, Alison M. R.); Chellamma, S (Chellamma, Sreekala); Samuel, JP (Samuel, J. Pon); Phillips, GC (Phillips, Gregory C.) Source: FRONTIERS IN PLANT SCIENCE Volume: 12 Article Number: 751230 DOI: 10.3389/fpls.2021.751230 Published: JAN 7 2022 Times Cited in Web of Science Core Collection: 6 Accession Number: WOS:000758002400001 PubMed ID: 35069615 ISSN: 1664-462X Record 5 of 5 Title: Arabinogalactan Proteins in Plant Roots - An Update on Possible Functions Author(s): Hromadova, D (Hromadova, Dagmar); Soukup, A (Soukup, Ales); Tylova, E (Tylova, Edita) Source: FRONTIERS IN PLANT SCIENCE Volume: 12 Article Number: 674010 DOI: 10.3389/fpls.2021.674010 Published: MAY 17 2021 Times Cited in Web of Science Core Collection: 13 Accession Number: WOS:000656126700001 PubMed ID: 34079573 ISSN: 1664-462X
OCA18. Charakteristika dopadu výstupu na spoločensko-hospodársku prax / Characteristics of the output's impact on socio-economic practice <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výsledky výskumu rozširujú poznatky týkajúceho sa procesu androgenézy na molekulárnej úrovni a to v súvislosti s úlohou tzv. PR proteínov a arabinogalaktanov v procese androgenézy v súvislosti s rekalcitrantnými druhmi ako je raž siata. Výsledky sú využiteľné pre šľachtiteľské prostredie pri príprave haploidov, čo umožní lepšie prekonávať problémy súvisiace s rekalcitrantnosťou niektorých voči androgenéze./The results of the research expand the knowledge regarding the process of androgenesis at the molecular level. The results are useful for the breeding environment in the preparation of haploids, which will allow better overcoming the problems related to the recalcitrantness of some to androgenesis.
OCA19. Charakteristika dopadu výstupu a súvisiacich aktivít na vzdelávací proces / Characteristics of the output and related activities' impact on the educational process <i>Rozsah do 200 slov v slovenskom jazyku / Range up to 200 words in Slovak</i> <i>Rozsah do 200 slov v anglickom jazyku / Range up to 200 words in English</i>	Výstup je orientovaný na rastlinné biotechnológie a je viazaný na výučbu biotechnologických predmetov v rámci študijného programu Biotechnológie. Do vzdelávacieho procesu budú z tohto výstupu implementované poznatky, skúsenosti a výsledky z produkcie rastlinných enzýmov spájaných s vývinovými procesmi a obranou prakticky využiteľných v moderných biotechnológiách. Dopady sa prejavia vo výučbe predmetov s biotechnologickým a biologickým obsahom./The output is focused on plant biotechnology and is linked to the teaching of biotechnology courses within the study program Biotechnology. From this output, knowledge, experience, and results from the production of plant enzymes associated with plant development and defense that can be used in modern biotechnologies will be implemented into the educational process. Impacts will be reflected in the teaching of subjects with biotechnological and biological contents.