



ISSN 1311-0489 (Print)  
ISSN 2367-8364 (Online)

**Agricultural Academy**

**JOURNAL  
OF MOUNTAIN AGRICULTURE  
ON THE BALKANS**

**Volume 21**

**Number 3, 2018**

**Published by  
Research Institute of Mountain Stockbreeding and Agriculture  
Troyan, Bulgaria**

**AGRICULTURAL ACADEMY, SOFIA, BULGARIA**

**JOURNAL OF MOUNTAIN AGRICULTURE  
ON THE BALKANS (JMAB)®**

**ISSN 1311-0489 (Print); ISSN 2367-8364 (Online)**

**JOURNAL OF MOUNTAIN AGRICULTURE ON THE BALKANS** is a bilingual journal issued six times a year by the Research Institute of Mountain Stockbreeding and Agriculture (RIMSA) in Troyan, Bulgaria. Its scope includes basic and applied researches relevant to agriculture and stockbreeding in the mountain, hilly and lowland areas in Bulgaria and abroad. JMAB is an international free open access web based scientific journal dedicated to the publication and discussion of high-quality research in the field of Stockbreeding, Forage Production and Grassland Management, Annual and Perennial Plants and General Agriculture. It publishes original scientific papers, overviews and short communications which are doubleblind peer reviewed.

*For contributions and subscription information, please contact the Editorial Office:*

*RIMSA, 281, Vasil Levski Str.*

*5600 Troyan, Lovech District*

*Bulgaria*

*Tel.: +359/670/66914*

*Mobile: +359/877/743604*

*E-mail: [jma@mail.bg](mailto:jma@mail.bg)*

*Website: <http://www.rimsa.eu/index.php/journal>*

**Editorial Board**

**Editor-in-Chief:** Assoc. Prof. Diyan Georgiev, PhD (Troyan, Bulgaria)

**Deputy Editor-in-Chief:** Assoc. Prof. Maria Georgieva, PhD (Troyan, Bulgaria)

**Managing Editor:** Diana Todorova (Troyan, Bulgaria)

**Members:**

Prof. Stefan Gandev, DSc (Plovdiv, Bulgaria)

Prof. Hristina Yancheva, PhD (Plovdiv, Bulgaria)

Prof. Maria Ivanova-Kicheva, PhD (Sofia, Bulgaria)

Prof. Aneliya Katova, PhD (Pleven, Bulgaria)

Prof. Tsvetoslav Mihovski, PhD (Troyan, Bulgaria)

Prof. Boryana Churkova, PhD (Troyan, Bulgaria)

Prof. Ivan Minev, PhD (Troyan, Bulgaria)

Assoc. Prof. Penko Zunev, PhD (Troyan, Bulgaria)

Assoc. Prof. Gercho Gerchev, PhD (Troyan, Bulgaria)

Assoc. Prof. Teodora Spasova, PhD (Troyan, Bulgaria)

Assoc. Prof. Boryana Stefanova, PhD (Troyan, Bulgaria)

Assist. Prof. Svetoslava Stoycheva, PhD (Troyan, Bulgaria)

Prof. Milan Petrović, PhD (Belgrade-Zemun, Republic of Serbia)

Prof. José Leitão (Faro, Portugal)

Dr. habil. István Tóbiás, DSc (Budapest, Hungary)

RNDr. Jan Nedřík, PhD (Toužimsko, Czech Republic)

Res. Assoc. Milan Lukić, PhD (Niš, Republic of Serbia)

ISSN 1311-0489 (Print)  
ISSN 2367-8364 (Online)

**Agricultural Academy**

**JOURNAL  
OF MOUNTAIN AGRICULTURE  
ON THE BALKANS**

Volume 21

Number 3, 2018

**Published by  
Research Institute of Mountain Stockbreeding and Agriculture  
Troyan, Bulgaria**

**C O N T E N T S**

<b>Stockbreeding</b>	
, -	<p><b>Katya Dimitrova, Atanas Vuchkov</b>                      Tulum cheese – cheese making technology and main characteristics  <span style="float: right;"><b>1-26</b></span></p>
, ,	<p><b>Borislav Blazhev, Ljubomir Angelov, Dimitar Gadjev</b>                      Biological effect of selenium supplementation during the pasture period of sheep, reared in some endemic areas of the Western Rhodope Mountain on selenium content in the milk  <span style="float: right;"><b>27-36</b></span></p>
, , -	<p><b>Dimitar Gadjev, Borislav Blazhev, Tsonka Odjakova, Ljubomir Angelov</b>                      - Influence of selenium and iodine supplementation on the milk yield and selenium and iodine content in the milk during the grazing period of sheep reared in Middle Rhodope Mountain  <span style="float: right;"><b>37-47</b></span></p>
, ,	<p><b>Hristo Hristev, Ivelina Zapryanova</b>                      Influence of the season of obtaining on the quality of boar semen  <span style="float: right;"><b>48-56</b></span></p>
, , ,	<p><b>Alush Musaj, Bahtir Hyseni, Valdet Gjinovci, Festim Rexhepi</b>                      Detection of antibacterial substances regarding the residues in raw milk  <span style="float: right;"><b>57-64</b></span></p>
, (SBR)	<p><b>Alush Musaj, Dafina Llugaxhiu, Bahtir Hyseni</b>                      - Activated sludge process for dairy wastewater treatment using SBR reactor  <span style="float: right;"><b>65-79</b></span></p>
, , ,	<p><b>Alush Musaj, Arife Gashi, Dafina Llugaxhiu, Bahtir Hyseni</b>                      Determination of heavy metals in hen's eggs in Kosovo  <span style="float: right;"><b>80-90</b></span></p>

<b>Forage Production</b>	
, , , ( <i>Trifolium pratense</i> L.)	<b>Norbert Britaák, Katarína Hrková, Iveta Ilavská, Lubomír Hanzes</b> Germination and seed production of red clover ( <i>Trifolium pratense</i> L.) from over-sown grassland and arable land <b>91-101</b>
	<b>Aneliya Katova</b> Forage yield in competitive variety testing of tetraploid perennial ryegrass <b>102-114</b>
, ,	<b>Aneliya Katova, Anna Ilieva, Jelyazko Vulchinkov</b> Breeding assessment of the water-soluble carbohydrates content in perennial grasses accessions <b>115-134</b>
,	<b>Natalia Georgieva, Ivelina Nikolova</b> Comparative estimation of alfalfa cultivars regarding some main biological parameters <b>135-149</b>
, „Lebosol®- tal Care” ( <i>Medicago sativa</i> )	<b>Iliana Ivanova, Diana Marinova</b> Influence of the Lebosol®-Total Care leaf fertilizer on the resistance of young lucerne ( <i>Medicago sativa</i> ) to leaf pathogens <b>150-161</b>
, , , , ,	<b>Stanimir Enchev, Elena Dimcheva, Tzvetan Kikindonov</b> Dynamics of biomass accumulation in sugar beet, fodder beet and table beet <b>162-171</b>
<b>Perennial Plants</b>	
, , ,	<b>Svetla Dyankova, Maria Doneva, Ayten Solak, Petya Metodieva</b> Comparative analysis of extracts from some medicinal plants used in traditional Bulgarian medicine <b>172-183</b>
, , ,	<b>Marin Hristov, Kristina Nikolova, Milen Venelinov, Zhelyu Avramov</b> Species composition of pathogens of medicinal and aromatic plants recorded in Bulgaria <b>184-206</b>

	<p><b>Veselka Antonova</b></p> <ul style="list-style-type: none"> <li>- Sort testing of strawberry culture</li> <li>- phenological observations and resistance to late-spring frosts</li> </ul> <p style="text-align: right;"><b>207-214</b></p>
	<p><b>Nedyalka Stoyanova, Veselka Antonova</b></p> <p>Comparative investigation of black currant varieties – number and length of clusters, number of blossoms and berries per cluster</p> <p style="text-align: right;"><b>215-223</b></p>
	<p><b>Neli Prodanova-Marinova</b></p> <p>Flumioxazin efficiency and selectivity in vine nursery</p> <p style="text-align: right;"><b>224-234</b></p>
	<p><b>Boryana Stefanova</b></p> <ul style="list-style-type: none"> <li>- Influence of rootstock cultivar combination over the leaf nutrient content of plums</li> </ul> <p style="text-align: right;"><b>235-245</b></p>
	<p><b>Georgi Popski, Boryana Stefanova</b></p> <p>Impact of soil maintenance systems on moisture reserve in young plum plantations</p> <p style="text-align: right;"><b>246-256</b></p>
<p><i>Prunus domestica</i> L.</p>	<p><b>Darina Ivanova, Stela Dimkova, Silvena Todorova, Nikolina Marinova</b></p> <p>Morphological characteristics and chemical composition of fruit of plum hybrids of <i>Prunus domestica</i> L.</p> <p style="text-align: right;"><b>257-265</b></p>
<b>General Agriculture</b>	
<p>(<i>Capsicum annuum</i> L.) (<i>Solanum lycopersicum</i> L.)</p> <p>" "</p>	<p><b>Milica Stankovi -Popi , Radmila Trajkovi , Snežana Andjelkovi</b></p> <p>Germination of seeds of vegetable cultures of peppers (<i>Capsicum annuum</i> L.) and tomatoes (<i>Solanum lycopersicum</i> L.) and growing of young plants on the mine dumps substrate from Kišnica Mine and Kosovo B thermal power plant</p> <p style="text-align: right;"><b>266-279</b></p>
	<p><b>Desislava Todorova</b></p> <p>Influence of sowing and planting dates on duration of broccoli vegetation period in Kyustendil region</p> <p style="text-align: right;"><b>280-288</b></p>

<p>, , , , , (<i>Lactuca sativa</i> L.) var. <i>romana</i> var. <i>capitat</i></p>	<p><b>Zhelyu Avramov, Paola Dimitrova, Boryana Taseva, Milena Yordanova, Milena Radeva, Nidal Shaban</b> Influence of abiotic stress factors in the occurrence of fungal pathogens on lettuce (<i>Lactuca sativa</i> L.) var. <i>romana</i> and var. <i>capitat</i> in Sofia valley <b>289-298</b></p>
<p>, , , , , , (<i>Lactuca sativa</i> L.) var. <i>romana</i> var. <i>capitata</i></p>	<p><b>Zhelyu Avramov, Petya Barisova, Boryana Ivanova, Svetoslav Anev, Milan Rizakov, Milena Yordanova, Nidal Shaban</b> Effect of abiotic stress factors on the presence of pathogens in lettuce (<i>Lactuca</i> <i>sativa</i> L.) var. <i>romana</i> and var. <i>capitata</i> planted in polyethylene mulch <b>299-311</b></p>
<p>, , 25</p>	<p><b>Manol Deshev, Gergana Desheva, Stanislav Stamatov</b> Monitoring of oil seed viability after 25 years long term storage <b>312-327</b></p>
<p>, , NaCl</p>	<p><b>Manol Deshev, Gergana Desheva, Stanislav Stamatov, Bozhidar Kyosev</b> The effect of NaCl salinity on germination and seedling growth of sesame seeds <b>328-344</b></p>