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# LEGAL AND ORGANIZATIONAL SITUATION IN AGRICULTURE OF THE VIROVITICA COUNTY AND THE CITY OF OSIJEK IN THE SECOND HALF OF THE 18TH CENTURY

## Abstract:

The Treaty of Karlowitz signed in 1699 concluded the rule of the Ottoman Empire in most parts of Central and Eastern Europe. Liberation of Osijek in 1687, and consequently of whole Slavonia in 1699 brought a new era of freedom and prosperity to its citizens. At least for a short time, since the Habsburg Monarchy re-established their rule over the country by bringing feudal laws and regulations back into force.

Austrian empress and Hungarian-Croatian Queen Maria Theresa united Slavonia with Croatia, and re-established the counties of Virovitica, Požega and Sirmia, meaning that the regional administration of Slavonia was completely relinquished to the civil authorities.

## Keywords:

legal history; agriculture; Virovitica County; Osijek, 18th century

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## Introduction

In the Great Turkish War, the Ottoman Empire was defeated after having occupied the most of Central European areas for more than 150 years. After signing of the Treaty of Karlowitz in 1699, Slavonia was liberated from the Ottoman rule. However, after the liberation, administrative status of counties and other areas was unregulated until 1745, when Austrian empress and Hungarian-Croatian Queen Maria Theresa united Slavonia with Croatia, and re-established the counties of Virovitica, Požega and Syrmia, while Slavonian Posavina was converted into a Military frontier. Upon completion of the neo-aquistic administration of Slavonia and the establishment of counties, regional administration of Slavonia was completely relinquished to civil authorities [4].

After having regulated political system and legal issues in the Virovitica County, from the middle of the 18th century onward, feudal lords engaged their serfs into crop production, while the citizens of Osijek were mainly focused on some crafts and trade. In a larger city area, there was also some arable land cultivated and livestock was produced. Although the agricultural land was not bringing much profit, it was still providing its owners some kind of steady income and security that others did not have.

## Establishment of the Virovitica County and its status during the second half of the 18th century

At the first general session of the Virovitica County Assembly held on 9th December 1745, the county area was divided into three districts - Virovitica, Osijek and Đakovo. The re-established Virovitica County spread on a larger area than in the past, and included the estates of Virovitica, Voćin, Orahovica, Našice, Valpovo, Đakovo, Retfala and the Chamber city of Osijek together with its sub-districts of Aljmaš, Dalj and Erdut. The new expanded area stretched from Virovitica to Osijek, from the river Drava to the south, to the middle of the Slavonian mountains, then descended to the Đakovo District, and north to Osijek all the way to Dalj, as well as to the east to the Syrmia County with its capital in Vukovar [18].

In 1785, Joseph II abolished the county organization established by his mother Maria Theresa, and divided Hungary and Croatia into ten districts (circulus), each district consisting of several counties. The Assembly did not meet, yet the councils did. The great prefect, elected by the king, was subordinate to the king's trustee and carried out the king's orders. The deputy prefect was appointed by the district president. At that time, Slavonia and Baranya counties formed one district with the center in Pécs [1], and the Požega County joined with the Zagreb district. All districts were under the authority of the Royal Hungarian Council of Governors. After the death of Joseph II in 1790, counties were re-organized according to the original structure from the middle of the 18th century.

## Legal relations between landlords and serfs in the Virovitica County

In the feudal era, agriculture was a main industry of all countries, and almost all available workforce was engaged in food production. Upon establishment of civil administration of the Virovitica County, many irregularities occurred between serfs and their feudal lords. Settling of such irregularities and disputes by feudal lords was always detrimental to serfs. Serfs had to pay state tax, as well as county tax (domesticum). According to the needs of the county, usually between 15 and 30 denars would be added to each tax forint in favor of county treasury (cassae domesticae). This treasury also included indirect taxes (iуди extraordinarii), which were paid by millers, brandy distillers, domestic and foreign traders, craftsmen, fishermen, butchers, brewers, boatmen, potters and others. Before the Urbarium amendments, the serf-landlord gave his feudal lord 12 forints for the land, 8 forints for the forced work reluctance and 3 forints for census, with the addition of 12 days of forced work per year [18]. Also, the serf had to give lodging to the army, supply garrisons and military brickyards with wood (regulation adopted on 11th May 1728), supply material for the construction of 10 barracks, be prepared for the army in transit and give a lot more, whatever the feudal lords, their administrators and county officials came up with [2].

Since the serfs could not bear the burden of such heavy taxes, they started a rebellion on Virovitica

fiefdom, about which the baron Marko Pejačević informed Queen Maria Theresa in his letter dated 7th October 1754. Soon, this rebellion spread to the bordering fiefdoms, but without proper leadership and organization, it ended up as nothing more than a pillage and drunkenness without any casualties [2].

In order to define rules and relations between feudal lords and their serfs, rulers engaged in writing of legal books called urbariums (in Croatian: urbari) to legally regulate mutual rights and obligations of landlords and serfs. Urbariums of Charles VI and Maria Theresa greatly improved the position of serfs in relations to their feudal lords, yet in some aspects, the status of serfs was also worsened. The first urbarium for Slavonia was prescribed by Charles VI in 1737 (Carolina urbarialis regulatio), however, that urbarium never entered into force. Queen Maria Theresa prescribed the Slavonian Urbarium in 1756, and the Croatian Urbarium in 1780. It is important to note that in 1755, Queen Maria Theresa issued a temporary urbarium for Croatia, which was also never exercised in practice [8].

### Theresiana Urbarialis Regulation

On 7th November 1749, Queen Maria Theresa wrote a letter to the Virovitica County prefect, saying that she had been informed that the county's feudal lords had expressed a wish to create a document that would organize serfs' obligations and payments, and that she was looking forward to document of that kind. She ordered County's

Assembly to create a basic draft of urbarium and report back to her as soon as possible. On 20th April 1750, the County elected a special urbarial committee to draw up a draft of the urbarium. That committee had 6 months to do the work and to present the draft urbarium to the Assembly, where it would be discussed and finally submitted to the Queen. The committee finished its work earlier, and already on 3rd August 1750 submitted its draft urbarium to the Assembly. Since they did not send anything to the Queen, Maria Theresa reminded them in 1754. Only then, the County took on its work more seriously. At the Assembly on 21st August 1754, a conclusion was reached that the urbarial committee should examine the arrangements related to urbarial issues in the neighbouring counties of Baranya, Zala and Tolna. After having collected the material and opinions from all sides, the county elected a new urbarial committee at the Assembly on 9th December 1754. This committee completed the work in 8 months and handed it over to the County, which discussed it and accepted it at its Assembly on 21st July 1755. On that same day, "Idea Urbarialis" was handed over to the Royal Commission, which happened to arrive in Virovitica for some other reasons [2].

On 15th March 1756, Queen Maria Teresa proclaimed Slavonian Urbarium as a joint urbarium for Požega, Virovitica and Sirmia counties [3]. With Slavonian Urbarium, obligations of serfs and feudal lords were officially regulated to facilitate undisturbed agricultural work of serfs on feudal lords' land.

Less than a century later, in 1848, feudalism was abolished in Croatia, thus making all urbarium provisions void.

## Regulamentum domaniale

As Slavonian Urbarium did not regulate all spheres of feudal relations, some landlords devised their own additional rules and regulations to exploit their land more efficiently and to make more profit. One of such individual rulebooks is Regulamentum domaniale or How the feudal land is ruled. It was an agricultural manual written by the nobleman Ivan Kapistran Adamović in 1774 for his foreman working on his estate of St. Helen. The manual dealt with techniques and economics of production, the maintenance of property, livestock, roads, buildings and tools, the organization of work, issuing of orders, and even with punishments for people who caused some damage. The manual was divided in 14 chapters with a total of 420 paragraphs [3].

In the manual, Adamović regulated all economic activities carried out on his estate, so that it is an excellent source of information for the reconstruction of economic activities of the past. Emphasis was put on those business segments that were the most profitable for Adamović. In the manual, he made clear that the most profit was made by selling wine. The data contained therein revealed the estate structure devised according to market characteristics. The value of this manual is not only economic but also linguistic, because it is written in Kajkavian dialect of Croatian language. The importance of this manual for Croatian economic thought lies in the fact that it represents a unique view on the functioning of a late feudal and early capitalist estate. Therefore, Adamović

can be considered as the first Croatian economist to write his work in the Croatian language [10].

## **Importance of agroecological conditions of the Virovitica County**

Agroecological conditions in the Virovitica County were influenced by its geographical position, since the west part of the county was located in a lowland area surrounded by the Bilogora hills on one side [7]. On the north, there was a plain to the Drava River, so winds were coming mostly from the Drava valley in the north. Very cold winds from both east and west blew during the winter months, making winter seasons even colder [12].

The territory of the Virovitica County was characterized by humidity of the low Podravina plain. The soil formation in this area was largely influenced by the two large rivers - Drava and Sava [19]. The soil in the territory of the Virovitica County was mostly colluvium glazed and unglazed, or clayey, but there was also alluvial-colluvial glazed and clayey Hypogley [14].

Just as cold and windy winter days made life of the Virovitica County residents more difficult, so did hot summer days, since hot weather without a breath of wind was not easy to tolerate [5]. Such climate conditions made agricultural work very difficult. During hot summer days, while the sun burned relentlessly, sudden weather changes and summer storms were frequent. For agricultural crops, sudden destructive winds and occurrence of hail were particularly dangerous. Fortunately, the Virovitica County was rarely hit by such storms

[20]. It could take several years without weather disasters devastating this area, which was favourable for development of agriculture [15].

The Virovitica County was also rich in wood. Many areas were covered with woods of beech trees (*Fagus sylvatica* L.), oaks (*Quercus* spp.), beech (*Fagus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.) or poplar and aspen (*Populus* spp.), so county inhabitants were also engaged in wood trading and carpentry [11].

## **The structure and organization of the Virovitica County estates**

In 1745/1746, in the area of the Virovitica County (without Čepin), there were 6,637 landowners with 2,445 adult brothers, and 381 widows with property. There were 26,033 acres of arable land, plum orchards spread on an area of 551 2/8 acres. There were 14,440 scythes of meadows and 3,823 1/2 hoes of vineyards. Referring to animals, there were 4,726 horses, 6,192 oxen, 6,474 cows, 296 foals, 4,336 heifers, 20,355 pigs, 3,173 sheep and goats, and 2,644 beehives. The whole County made tax contribution in the amount of 29,647.66 2/8 forints. Each married man with an estate had to pay 1.40 forints (for.), adult brothers living in the family or in the cooperative contributed with 1 for., each independent widow gave 0.20 for. Each acre of arable land was levied by 0.20 for., each acre of orchard by 0.75. The tax for each scythe of meadow was 0.18, for each hoe of vineyard 0.15, for each yoke of oxen 0.40, for each hoarse 0.30, for each dairy cow 0.25, for each heifer 0.20, for each foal 0.15, for



each hog 0.10, for each sheep and goat 0.10, and for each beehive 0.10 [2].

In the middle of the 18th century, there were many medium-sized estates in the Virovitica County, the owners of which usually disposed of 1 to 5 acres of arable land, and some owners had even less than 1 acre [13]. The structure of Slavonian estates and the number of villages in the 18th century is shown in Table 1. It is evident that the area was developing in economic and demographic terms, as there were larger estates and more villages appearing about two decades later.

Size of Estates	1726		1745	
	Number of estates	Number of villages in	Number of estates	Number of villages in
10 - 50	7	166	8	242
51 - 150	14	1.185	16	1.380
151 - 300	11	2.323	8	1.694
Over 300	2	1.126	2	870

Table 1. Structure of estates in Slavonia - comparison of 1726 and 1745 [9]

Wheat, maize and oats were common cereals cultivated in the Virovitica County. As stated in the Jesuit chronicles, the most common crop usually planted on their estate in Aljmaš was oat [16], since oat was used as a basic livestock feed because of its high content of fat and other nutritional elements. Next to maize [16], the most common crop grown for human consumption was

wheat. Since straw was a leftover of wheat, farmers and field workers used to burn the fields to destroy straw. Since military was in need of straw for their horses and other uses, on 8th May 1747, the Virovitica County assembly forbid its population to burn the straw and ordered to collect and store it for military needs instead [18].

Most of the crops, livestock or agricultural products were sold on fairs. During the 18th century, some of the oldest-known fairs in the Virovitica County (and in whole Croatia and Slavonia) were organized in Osijek (1713), Đakovo (1724), Virovitica (1754), Orahovica (1795) and Podgorač (1799) [6].

In 1753, the city of Osijek disposed of 1,100 property entities and tax liabilities. These entities were irreplaceable factors of the city's economic prosperity. Their contributions differed, as presented by the data on land distribution in the city of Osijek in 1753 (Table 2) [17].

	acre of arable land	scythe of meadow	hoe of vineyard
Inner Town	316	-	-
Upper Town	295	550	3
Lower Town	640	652	234,5
Total	1.251	1.202	237,5

Table 2. Land distribution in the city of Osijek in 1753 [17]

As presented in the Table above, in the area of Osijek Inner Town, there were no meadows or vineyards, while in the Upper Town, there were more meadows than arable land. The land of the Lower Town was evenly distributed. The citizens of Osijek did not have much use of their land, as the soil fertility was generally poor. The land was of poor quality and often flooded, not so much from the Drava River, but from the Vuka River in the south of the city. Frequent floods decreased the soil fertility, as pointed out in the available records. It should be noted that almost 50% of all city households, i.e. 541 of them, did not own any arable land. The most of households owned 1-2 acres of land, while landowners disposed of arable land of 1 to 4 acres in size [17].

The division of hayfields (meadows) and vineyards exhibited even greater differences. The Upper Town disposed of 550 scythes of meadows, which were divided among 165 landowners (38%) out of 428 landowners. The Lower Town disposed of 652 scythes of meadows, which were distributed among 208 landowners (37%) out of total 562 of

them. There were 234 hoes of vineyards divided among 96 (17%) households. Therefore, in the middle of the 18th century, the distribution of land in Osijek was unbalanced.

There were also many serfs with no possession of land. They were usually employed by landowners and worked for a salary wherever they were needed. In order to avoid the arbitrariness of individual employers, who used to ignore the average wages and often paid their workers less than deserved, on 21st May 1776, the Virovitica County Assembly decided to set the price of daily wages of the workers in order to stop the exploitation of workers [21].

Although the land was not bringing much profit, it was still providing its owners some kind of income and security that others did not have. Over the years, the land in the city of Osijek was gaining on its value, yet it brought also tax liabilities to its owners. Admission to the city of Osijek Chamber was conditioned by the ownership of land, as it was considered a steady source of income [17].

Groups of arable land in acres	Inner Town	Upper Town	Number of land owners			%
			Lower Town	Total		
0-1/2	29	287	225	541	49,19	
1/2-1	-	12	16	28	2,54	
1-2	1	50	153	204	18,55	
2-3	6	39	98	143	13,00	
3-4	32	25	43	100	9,09	
4-5	26	-	15	48	4,37	
5-6	12	3	5	20	1,81	
6-7	1	2	3	6	-	
7-8	2	1	1	4	-	
8-9	1	-	-	1	-	



9-10	-	1	-	1	1,45
10-11	-	1	1	2	-
11-12	-	-	-	-	-
12-13	-	-	2	2	-
Total	110	428	562	1.100	100

Table 3. Division of land among citizens of Osijek in 1753 [17]

As presented in the Table 3, the total area of arable land in the city of Osijek was not sufficient to provide for living of the Osijek citizens, so they had to look for other sources of income. At that time, total land fund could provide for only 1/3 of around 5,000-6,000 citizens of Osijek. Agriculture as an economy branch could not provide for existence of growing Osijek population, since agriculture was of low profitability until 20th century. Therefore, the development of the city of Osijek was limited by its land resources, so apart of agriculture, its citizens engaged in crafts, trade, construction, provision of services and other economic activities [17].

Cattle breeding was a popular agricultural activity in the city of Osijek. During 1745-1746, the distribution of horses and livestock was proportional to the number of serfs. In the Virovitica County, the village of Voćin was disposing of the most pigs, precisely 5,011 of them. It was followed by the city of Virovitica with 3,506 pigs, Valpovo with 3,934 pigs, Orahovica with 2,862 pigs, and Đakovo with 2,129 pigs. Besides pigs, inhabitants of the Virovitica County bred other livestock, as overviewed in the Table 4. Due to the urbanization of cities, trade, crafts and other activities, the number of livestock units in cities decreased. For example, in Osijek at the beginning of the 18th century, there were about 20% more livestock, then half a century later (Table 5). The Osijek Lower Town disposed of more meadows than other city parts, so people used to keep livestock on pastures. For that reason, Lower Town of Osijek maintained its rural way of life longer than the Upper Town. The number of cattle recorded in 1753 is shown in the Table 4.

Municipality	Oxen		Cow and calf		Horses and mares		Sheep and goats		Pigs	
	NF	LS	NF	LS	NF	LS	NF	LS	NF	LS
Inner Town	2	7	15	40	12	41	-	-	1	4
Upper town	42	103	198	288	120	215	-	-	2	13
Lower town	27	58	191	248	152	209	16	699	13	17
Total	71	168	404	576	284	465	16	699	16	34

\*NF - Number of farmers; LS - Livestock unit

Table 4. Distribution of cattle in the Osijek city parts in 1753 [17].

Out of total 1,100 Osijek households, 536 were engaged in cattle breeding, of which 18 households were located in the Inner Town (3%), 249 in the Upper Town (47%), and 269 in the Lower Town (50%). Those data show that in 1753, more than half of Osijek's households did not own any cattle, which indicates the progress of urbanization. Still, back in 1753, there was a considerable number of "farmers" that kept cattle as an additional source of income [17].

Type of cattle	Inner Town		Upper Town		Lower Town		Total	
	1702	1753	1702	1753	1702	1753	1702	1753
Oxen	26	7	60	103	52	58	138	168
Cows	52	40	304	288	107	248	463	576
Calves	37	-	63	-	100	-	200	-
Heifers	-	-	90	-	43	-	133	-
Horses	66	41	82	215	68	209	216	465
Foals	-	9	-	9	-	-	-	18
Beehives	21	-	92	13	83	11	196	24
Sheep	53	-	2	-	-	669	55	669
Goats	22	-	1	-	18	-	41	-
Goatlings	-	-	-	-	9	-	9	-
Hogs	54	-	26	-	83	-	163	-
Pigs	-	4	20	13	51	17	71	34
Total	331	92	749	632	623	1.212	1.703	1.936

Table 5. Number of cattle in Osijek in 1702 and 1753 [17]

As of the records on the number of cattle kept in Osijek, it is seen that the number of cattle kept in Inner Town decreased from 331 heads in 1702 to only 92 heads in 1753. This decrease was caused by the urbanization processes, within which the citizens of Osijek turned to trading and crafts [17].

In 1753, the number of cattle kept in the Upper Town also decreased by 16%, whereas in the Lower Town, its number was almost double than in 1702. The increase in the number of cattle by 95% reflected the rural characteristics of this part of the city, since there were many good pastures, meadows and arable land. When referring to the whole area

of the city of Osijek, there were 233 heads of cattle, or 20% more cattle in 1753 than in 1702. However, this increase was modest in relation to the increase in population. When observing numbers of individual types of cattle, there were 200 pigs less in 1753 than in 1702. Sheep and goats disappeared from the Inner Town and the Upper Town, while their number in the Lower Town grew to such extent to cause an increase in the total number of cattle kept in Osijek. Several farmers kept hundreds of sheep on the meadow of Klisa to produce meet for city butcheries. Yet, the production of meet was not sufficient for the city

demand, so cattle were also imported from more distant areas to provide for city supplies. Insufficient production of cattle in the city of Osijek was caused not only by urbanization and orientation of citizens to trade and crafts, but also by unavailability of pastures, meadows and arable land. Moreover, infectious diseases also destroyed herds of cattle at that time. Cattle were usually kept for household needs, sometimes for commercial purposes. Reduced area under pastures led to the decrease in number of cattle [17].

## Conclusion

After the Ottoman occupation of Slavonia, Queen Maria Theresa re-established old Slavonian counties of Virovitica, Požega and Syrmia in 1745. By restoring the civil administration, old feudal obligations came back into force as well. With the introduction of the Slavonian Urbarium in 1756, most of the disputes between serfs and feudal lords were resolved, so the situation on the estates became favourable for development of agriculture. Having all disputes settled and the legal framework for agriculture determined, feudal lords and their serfs became significantly engaged in agricultural activity in the second half of the 18th century onward. In the middle of the 18th century, there were many medium-sized estates in the Virovitica County, the owners of which disposed of arable land, mostly from 1 to 5 acres, and some owners had even less than 1 acre. The yield of crops was mostly given to house cooperatives of larger feudal

estates and the rest was sold on fairs in different towns. Legal and political reforms directly affected agriculture development, so crop production was significantly increased in the Virovitica County. However, social position of serfs and peasants was not improved much by those reforms. Many of the feudal lords took the arable land from peasants and exchanged it for uncultivated land in return. In that case, peasants needed to clean the given land from trees, bushes or weeds to make it useful for agricultural activity.

At that time, the citizens of Osijek were mainly engaged in crafts or trade. Due to the urbanization process, there was not enough arable land at disposal for significant agricultural undertakings and for extensive livestock production. Agricultural activity was not bringing much profit, yet it was still providing the landowners some kind of income and security that other citizens did not have. Over the years, the land in the city of Osijek was gaining on its value, yet it brought also tax liabilities to its owners. Admission to the city of Osijek Chamber was conditioned by the ownership of land, as it was considered a steady source of income.

## References

- [1] Beuc, I. (1969). *Povijest institucija državne vlasti u Hrvatskoj: 1527-1945.*, Arhiv Hrvatske, Zagreb.
- [2] Bösendorfer, J. (1931). *Kako je došlo do slavonskog urbara 1756. godine?*, JAZU paper 240, book 242.
- [3] Bösendorfer, J. (1950). *Agrarni odnosi u Slavoniji*, Jugoslavenska akademija znanosti i umjetnosti, Zagreb.

[4] Engelsfeld, N. (2002). Povijest hrvatske države i prava Pravni fakultet u Zagrebu, ISBN: 953-6714-41-8, Zagreb.

[5] Filipčić, A. (2000). Razgraničenje Köppenovih klimatskih tipova Cf i Cs u Hrvatskoj. *Acta Geographica Croatica*, Vol. 35, No. 1, 2, pp. 7-17, ISSN: 1330-0466.

[6] Horvat, R. (1994). Povijest trgovine, obrta i industrije u Hrvatskoj, AGM, ISBN: 953-1740-24-0, Zagreb.

[7] Ilijanić, Lj. (1962). Prilog poznavanju ekologije nekih tipova nizinskih livada Hrvatske. *Acta Botanica Croatica*, Vol. 20-21, No. 1, pp. 95-167, ISSN: 0365-0588.

[8] Karaman, I. (1962). Postanak i značenje privremenog urbara za hrvatsku iz god. 1755. *Radovi Filozofskog fakulteta Odsjek za povijest*, Vol. 4, pp. 51-78.

[9] Karaman, I. (1997). Iz prošlosti Slavonije, Srijema i Baranje: studije o društvenoj i gospodarskoj povijesti XVIII. -XX st., *Povijesni arhiv*, ISBN: 953-6446-10-3, Osijek.

[10] Karpati, T. (1984). Začeci ekonomske misli u Slavoniji. *Prilozi za povijest ekonomske misli na tlu Jugoslavije od 15. - 20. stoljeća*, Informator, Zagreb.

[11] Matić, S. (2011). Utjecaj stanišnih promjena i načina gospodarenja na sušenje obične smreke (*Picea abies* Karst.) u Hrvatskoj. *Croatian Journal of Forest Engineering*, Vol. 32, No. 1, pp. 7-16, ISSN: 1845-5719.

[12] Milković, J., Sijerković, M. (1996). Vremenska i klimatska obilježja Voloskog. *Hrvatski meteorološki časopis*, Vol. 31, No. 31, pp. 23-39, ISSN: 1330-0083.

[13] Plaščak, E. (2009). Kretanje posjeda poljoprivrednog zemljišta na području naselja Osijeka od proglašenja slobodnog kraljevskog grada do danas. *Anali Zavoda za znanstveni i umjetnički rad u Osijeku*, Vol. 25, No. 12, pp. 11-21, ISSN: 1332-456X.

[14] Radočaj, D., Velić, N., Jurišić, M., Merdić, E. (2020). The remediation of agricultural land contaminated by heavy metals. *Poljoprivreda*, Vol. 26, No. 2, pp. 30-42, ISSN: 1330-7142.

[15] Sraka, M., Škevin, D., Obranović, M., Butorac, J., Magdić, I. (2019). Agroekološki uvjeti uzgoja industrijske konoplje u zapadno Panonskoj poljoprivrednoj podregiji Hrvatske i sastav masnih kiselina ulja sjemena. *Journal of Central European Agriculture*, Vol. 20, No. 3, pp. 809-822, ISSN: 1332-9049.

[16] Sršan, S. (1993). *Osječki ljetopisi 1686. - 1945.*, Povijesni arhiv, Osijek.

[17] Sršan, S. (1998). Gospodarstvo Osijeka od prvog spomena imena Osijek 1196. do 1850. godine, In: *Gospodarstvo Osijeka: 1196-1996.*, Slavica Singer (Ed.), pp. 13-60, Poglavarstvo grada Osijeka, ISBN: 980-212-03-7, Osijek.

[18] Sršan, S. (2008). *Statuti Virovitičke županije 1745.-1792.*, Državni arhiv u Osijeku, ISBN: 978-953-6446-56-8, Osijek.

[19] Stošić, M., Brozović, B., Vinković, T., Ravnjak, B., Kluz, M., Vladimir, Z. (2020). Soil resistance and bulk density under different tillage system. *Poljoprivreda*, Vol. 26, No. 1, ISSN: 1330-7142.

[20] Tomić, F. (2020). Unapređivanje hrvatske poljoprivrede popravljajanjem postojećih nepovoljnih prirodnih uvjeta. *Radovi Zavoda za*

znanstvenoistraživački i umjetnički rad u  
Bjelovaru, Vol. 14, No. 3, ISSN: 1846-9787.

[21] Vrbošić, J., Haman, D. (2014). Naknade za rad  
tijekom druge polovine 18. stoljeća na području  
virovitičke županije s posebnim osvrtom na osječki  
kotar i sam grad Osijek. Pravni vjesnik, Vol. 30, No.  
1, ISSN: 0352-5317.