APPLICATION FOR REGISTRATION
OF ~~THE DESIGNATION OF ORIGIN~~ / GEOGRAPHICAL INDICATION[1)]
FOR AN AGRICULTURAL PRODUCT OR FOODSTUFF

I. Applicant
Stowarzyszenie Czosnek Galicyjski [Galician Garlic Association]

1. Name or first name and surname[2]
Stowarzyszenie Czosnek Galicyjski [Galician Garlic Association]

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4. Person acting on behalf of the applicant:

Jarosław Łojek

5. Group:
The Galician Garlic Association is an initiative of garlic producers, vegetable distributors and growers, established to promote garlic, and in particular to register the name "czosnek galicyjski" as a Protected Geographical Indication. The association has 81 members, mainly producers, supported by vegetable distributors and a grower. The Association is headquartered in the village of Prandocin Iły, where the first records of garlic production come from.

II. Specifications

1. Name:

Czosnek galicyjski

2. Application for registration of:

(1) designation of origin	
(2) geographical indication	X

[1] Delete as appropriate

[2] Only a group is entitled to apply for registration. A natural or legal person can apply for registration once the European Commission has defined the conditions under which such person can be treated as a group.

3. Category

Please specify the category to which the agricultural product or foodstuff belongs[3].

Class 1.6. Fruit, vegetables and cereals, fresh or processed.

4. Description:

The name ‘czosnek galicyjski’ applies to fresh bulbs of common garlic (Allium sativum L.). Under this name, garlic of the ‘Harnaś’ and ‘Arkus’ varieties is marketed.

The specific characteristics of ‘czosnek galicyjski’ include: the content of active biological substances and typical morphological characteristics:

- alliin content – minimum 1.65 g 100 g^{-1}dm,
- anthocyanin colour to the skin (purple-pink or purple), covering at least 30% of the surface of the skin of the cloves,
- spherical bulb not less than 50 mm in diameter,
- approximately 6-9 cloves of garlic per bulb,
- resistance to cold.

5. Geographical area:

Lesser Poland Voivodeship (the communes of Słomniki and Radziemice and the following communities in the commune of Koniusza: Niegardów, Niegardów Kolonia, Piotrkowice Wielkie, Budziejowice and Muniaczkowice).

Figure 1. Map of the ‘czosnek galicyjski’ cultivation area (green)

[3] To be completed by the body that sends the application to the European Commission.

6. Proof of origin:

The production and sale of ‘czosnek galicyjski’ are controlled by the Galician Garlic Association, certifying bodies and the competent state administration bodies.

Any producer wishing to produce ‘czosnek galicyjski’ with a protected designation of origin must comply with the following rules:

1. First of all, garlic must be produced in the area described in point 5 of this application.
2. Second of all, garlic must be produced in accordance with the rules described in point 7, and the final product must meet the requirements described in point 4.
3. ‘Czosnek galicyjski’ must be produced in accordance with the principles of food quality and safety systems, i.e.: Integrated Production or GLOBALGAP.
4. The producer is obliged to provide the Galician Garlic Association with a written declaration containing the following data:
   (a) First name and surname of the producer;
   (b) Location of crops;
   (c) Garlic crop area;
   (d) Estimated production volume in a given year, specifying varieties;
   (e) The producer’s declaration to comply with the specifications, including the obligations arising from the “proof of origin”.
5. The producer must immediately report any changes to the data provided in the declaration referred to in point 4.
6. Each registered producer receives a unique number assigned by the Association that must be used on the ‘Czosnek galicyjski’ label. If the producer has been assigned a GGN number (GLOBALGAP number), it may attach information on this number to the application referred to in point 4 along with a declaration to use its GGN number instead of the number assigned by the Association.
7. The producer is obliged to keep documentation covering:
   (a) Growing method;
   (b) Crop size;
   (c) Garlic sales, specifying the buyer as well as the quantity and packaging of garlic sold;
   (d) Crop area and location.

   The register may be kept in any form, provided that the entries are accurate.

   The aforementioned documentation must also be kept by all entities in the supply chain.

7. Growing method:

‘Czosnek galicyjski’ must be produced in a way that ensures not only its highest quality, but mainly safety for the consumer. Therefore, ‘czosnek galicyjski’ must be grown in accordance with the Integrated Production technology or GLOBALGAP principles.

Planting

Winter garlic varieties are planted from mid-October to mid-November, depending on weather conditions. However, the planting time should be adjusted in such a way that the plants can take root before frost comes. Planting cloves too early may have adverse effects, as overgrown

plants may freeze. Pre-selected certified material (cloves) should be used for planting. To obtain a high yield of good quality only large and medium-sized cloves obtained after splitting the bulb immediately before planting should be used. Any signs of disease, pest feeding or mechanical damage disqualify the cloves as propagation material. Garlic cloves are planted by hand or mechanically using tractor planters to a depth of 5-7.5 cm, with the root plate down, in rows every 15-20 cm. Strip-row cultivation is also possible (Photo 1). This method is very practical in the case of mechanical harvesting. When growing garlic in the autumn, it is advisable to mulch the soil, but due to the mild climate in the Koniusza, Słomniki and Radziemice communes, this is rarely done.

Photo 1. Strip-row grown garlic.

Irrigation

Garlic has high water requirements, so it should be grown near watercourses and in areas with high rainfall. However, wet sites and swamps are not conducive to its grown. It is advisable to irrigate crops during long-term drought, because adequate soil moisture in late spring favours the growth of large bulbs with an adequate alliin content.

Soil

Garlic is very demanding to grow. Its high requirements regard, in particular, high content of organic matter in the soil. Fertile soil with high humus content should be used for it to grow. Such soil can be found in the communes of Koniusza, Słomniki and Radziemice. It is a rendzina area with a high pH value, resulting from the disintegration of limestone which covers only 1% of Poland and creates a specific microclimate soil in which to cultivate garlic.
Garlic is a vegetable very sensitive to rotation. Forecrops favourable for growing garlic include cereals, beans, cucumbers, tomatoes and grasses. Garlic should not be grown as a successor of any bulb plants, fodder and sugar beets, late cabbage, cauliflowers, as well as plantations infected with nematodes or fusariosis. Unfavourable forecrops also include legumes, especially broad beans and field beans. Fields intended for garlic cultivation should also be previously weeded. A month before planting, the soil should be deeply ploughed, and

immediately before planting, it should be loosened and well crumbled. These procedures can be performed with a harrow, cultivator or – very shallowly – with a rototiller.

Fertilisation

Plant nutrition is definitely the most important yield factor. In this case we are also dealing with an exceptionally high soil pH value that also affects the specific and unique characteristics of ‘czosnek galicyjski’. This garlic variety owes its unique appearance to the anthocyanin colouration of the skin, which is mainly due to the absorption of minerals at a high pH value. Thanks to the high pH value of the soil, garlic bulbs do not contain heavy metals and are rich in essential oil, active alliin and allicin, which is why they are eagerly used in the pharmaceutical and catering industries.

Both mineral and organic fertilisation is used, which favours a high yield of good quality. Any treatments that increase the humus content in the soil, such as using green manures, fertilising with compost or mulching with straw, significantly improve yields. The pH value of the soil prepared for planting should be 6.7-7.6. Mineral fertilisation should be based mainly on chemical analysis of the soil, as a result of which only deficient components are supplemented.

It is recommended that nitrogen fertilisers be applied in three doses: 1/3 before planting, and the other two doses are applied as top dressing: 1/3 in early spring just after emergence and 1/3 at the turn of May and June, by 10 June at the latest. Garlic responds very well to foliar feeding, therefore during long-term drought, when the uptake of macroelements and micronutrients is difficult, such treatments are a valuable source of nutrients for plants.

Garlic protection

Crops must be protected in accordance with the principles of integrated plant protection. The key principles to be followed by producers include preventing the occurrence of diseases and pests, and, if necessary, taking protection measures (after the economic harmfulness threshold has been exceeded, as ascertained through an inspection). Such treatments must be performed using the most environmentally friendly methods possible, but always keeping in mind their effectiveness.

Disease and pest control on the plantation should comply with the Vegetable Plant Protection Programme developed by authorised scientific entities. Such programme shall contain information on protection measures registered by the Ministry of Agriculture and Rural Development and permitted in garlic cultivation.

Care treatments

Care treatments on a garlic plantation, that mainly involve preventing the crop from becoming infested, should be instituted before planting the cloves in the field. Three weeks before the planned planting, herbicide treatments should be carried out to protect the plantation against excessive weed growth. All protection products used for weed control must be included in the list of protection products authorised for use in garlic cultivation approved by the Ministry of Agriculture and Rural Development in a given year. After the plants emerge in spring, care treatments continue to involve keeping the crop clean, loosening the soil between the rows

and protecting it against disease and pests. Nitrogen fertilisation should also be used, because doses applied in autumn are easily washed away as a result of heavy rainfall in autumn and winter. Arrow garlic, i.e. the winter varieties mentioned above and used to grow ‘czosnek galicyjski’, also requires topping, i.e. removing the scapes from the bulbs after they have looped. Removing the scapes too early leads to regrowth, while leaving them on the plant significantly reduces the yield and quality of the bulbs. In periods of long-term drought, irrigation has a very beneficial effect on crops, but it is very rarely used in this region.

Harvesting

Garlic harvesting begins around 10 July – the exact harvesting date is determined by the weather conditions in a given year. The harvest maturity of the product is ascertained when 40% of the plants in the plantation have dried leaves and the rest of the leaves are yellowed. Harvesting must be carried out at the right time so that the skin covering the bulb does not crack and the cloves do not split in the bulb.

‘Czosnek galicyjski’ is harvested by hand or using dedicated machinery. When garlic is harvested by hand, the bulbs are lifted out of the ground using a tractor and a special harvester. Tying into bundles (Photo 2) and pruning of chives and roots is done by hand. Garlic is increasingly often harvested using machines and devices specially prepared for this purpose. Invariably, for centuries, after digging out and tying into bundles, garlic has been transported to the farm and placed in drying rooms.

Photo 2. Bundled garlic bulbs

Drying

After harvesting, garlic is dried. In the area where ‘czosnek galicyjski’ is produced, many farms cultivate the long-established method of drying garlic in bundles in airy, roofed premises. Drying rooms must be airy and protect the product against moisture. The pre-cleaned bundles are placed on racks or sieves to dry completely. Once dried, garlic is cleaned by hand to remove dirty skin as well as root and leaf remains. Treating garlic in this way ensures it keeps well and retains excellent flavour and dietary properties. Drying at the right

temperature, i.e. minimum 15°C, and air circulation affects the stability of the main active substance of ‘czosnek galicyjski’, namely alliin.

Photo 3. Drying of ‘czosnek galicyjski’

Storage

Storage of the raw material in the adequate conditions is an important stage of the production of ‘czosnek galicyjski’. During storage, constant humidity at a low level, i.e. 60-70%, must be maintained. Such requirements are met by airy rooms or technically advanced specialised storage rooms. Only such conditions guarantee the adequate quality of ‘czosnek galicyjski’.

Preparation for sale

The production process ends with preparing the final product for sale. This step involves cleaning the garlic from redundant skin and eliminating bulbs with signs of disease or pest feeding. The thus prepared garlic undergoes calibration – only bulbs with a diameter of over 50 mm can be sold as ‘czosnek galicyjski’. The next stage of garlic preparation involves segregation in terms of the surface of anthocyanin colouration. The anthocyanin-induced purple-pink or purple colour of the skin should cover at least 30% of the clove skin surface.
The last stage involves packaging, which must – like all other stages – take place in the ‘czosnek galicyjski’ protection area.

8. Link with the geographical region:

Please present elements substantiating the link between a specific quality, reputation or characteristic of the agricultural product or foodstuff and its geographical origin in the area referred to in point 5, when applying for registration of the name specified in point 1 as a geographical indication.

8.1. Natural link

Geological origin

The areas of three communes near Krakow, namely Koniusza, Radziemice and Słomniki, are a unique place with specific soil conditions on the map of Poland. This is an area where the soil

reaction is exceptionally high, ranging from 6.7 to 7.9 pH. This is the south-western part of the Nida Basin, called the Proszowice Upland, cut by the valley of the Szreniawa River and its minor tributaries. The Miechów Basin is this area's tectonic unit.
The lithological relief of the formations in the Proszowice Upland region shows little variation. A thick layer of silty sediments covers post-Quaternary formations, which is reflected in the soil covers and landforms. The vertical surface features of the southern part of the Miechów Upland and the Szreniawa River basin show marked differences. Currently, this area is formed typically for loess deposits. This lie of the land is characterised by numerous rolling surfaces and peaks cut by a dense network of gorges and gullies. The lie of the land has a significant impact on the agricultural use of the area, which is also due to the historical growing traditions of this region.

Soil-forming processes and soil characteristics
Soil-forming processes and soil structure depend on the lithological formation of the Quaternary sediments, the water circulation system and the terrain. In the presented area, the current soil profile is also important. The interaction of these factors determines the direction of soil-forming processes and, depending on its nature, the appropriate soil type develops. In the case of the area to which the name refers, the soils developed on limestone rocks. Based on soil and agricultural maps, taking genetic features as well as physical and chemical properties of the substrate into account, the following soil types can be distinguished: true chernozems, degraded chernozems, chernozem rendzinas, humus rendzinas and brown rendzinas.
Chernozems were formed from loess deposits rich in calcium carbonate in conditions favouring the accumulation of large quantities of humus. These soils are characterised by an 80 cm deep humus horizon and a neutral or slightly alkaline soil reaction of the entire horizon. Degraded chernozems occur in drained valleys and depressions. They are characterised by a deep humus level of up to 150 cm. However, the humus content is significantly lower compared to true chernozems. The soil structure is also worse.
Rendzinas are built on limestone, gypsum and carbonate rocks and developed in the course of the weathering process. These are fertile soils with favourable physical properties and a slightly alkaline reaction, but difficult to cultivate. The parent material is based on a rock. There are no other levels. Humus rendzinas are characterised by a humus horizon with a thickness of 30-70 cm. Chernozem rendzinas are one of the most fertile soils with a humus level above 30 cm.
What all types of soils occurring in the area where 'czosnek galicyjski' is grown and produced have in common is the soil-forming process consisting in the disintegration of limestone, gypsum and carbonate rocks. As a result of this process, extremely fertile soils with an exceptionally high pH value have developed, which is an integral condition for the specific properties of 'czosnek galicyjski'.

Climatic conditions
Due to climatic reasons, this area is included in the Częstochowa-Kielce climatic district. Atmospheric circulation shows little regional variation. Air masses that most often flow into these areas include polar maritime air (64%) and – to a lesser extent – polar continental air (20%). Tropical and Arctic air masses are rare. As regards temperature, this area is transitional between the Sandomierz Basin and the uplands surrounding it from the west and north.

The average annual temperature is approximately 7.9°C.
In the light of the research, it can be concluded that the average annual air temperatures in the Proszowice Plateau and the Miechów Upland are slightly higher than in the areas located to the east, west and north of this region. The annual rainfall is 500-700 mm. The average number of days with effective precipitation (at least 1 mm) is 110. The peculiarities of the climate in the area concerned include limited precipitation in winter and heavy rainfall in summer.

Agricultural suitability
Having regard to factors favouring agricultural production, the following areas can be distinguished:

- very favourable ones (flat areas within top parts of the upland, plains, wide river valleys and slopes with an inclination of 3 degrees);
- favourable ones (slopes with an inclination of 6 degrees, narrow river valleys, wide basin-shaped valleys and flat areas cut by gorges);
- moderately favourable ones (slopes with an inclination of 6.1-10 degrees, narrow basin-shaped valleys and slopes with an inclination of 3.1-6 degrees cut by numerous gorges);
- little favourable ones (slopes with an inclination of 10.1-15 degrees and slopes with a lower inclination cut by numerous gorges).

In the area covered by our activities, the soils are very good and good. Soils of classes I and II account for 57% of all soils on arable land. 29% of the soils covered by grassland are class I and II soils. Based on soil analyses for nutrient content, the soil reaction in this region was found normal. It can be clearly stated that the soils in this region are very fertile and favour the development of agricultural production, especially vegetable farming. In the communes of Koniusza, Radziemice and Słomniki, arable land is the basic form of agricultural use and accounts for 77% of the area. The general index of agricultural production space quality, taking into account valuation classes, agricultural soil suitability complexes, land relief, water conditions and climate in the area concerned, is 102.8 and is one of the highest in Poland.

The influence of climatic and soil conditions on the specific characteristics of 'czosnek galicyjski'
The combination of specific soil conditions and exceptionally favourable climatic conditions, not found in other parts of Poland, determines the specific characteristics of 'czosnek galicyjski':

- anthocyanin pigments present in the garlic skin change their colour (only the skin) depending on the pH value of the soil in which the plants grow. In the case of acidic and slightly acidic soil, the colour is red, while in the case of a neutral pH value, the colour turns purple-pink. In alkaline environment, it turns purple. Thus, the anthocyanin colouration of garlic grown in the protected area is purple-pink or purple due to the high pH value;
- Moreover, the exceptionally early start of the growing season in the geographical area specified in point 4 enables optimal use of water stored in the soil after winter precipitation. This is extremely important in the first phase of growth and especially beneficial for bulb plants such as garlic. Thanks to this, 'czosnek galicyjski' bulbs grow large (over 50 mm). the combination of soil conditions (high pH value, fertile soil) with favourable climatic conditions creates a specific microclimate, which in turn increases the

content of active substances found in garlic. Based on the analysis of the test results, it was found that the alliin content in garlic grown in this area is on average 5% higher compared to garlic of the same varieties grown in other parts of Poland. The alliin content in garlic grown in the conditions prevailing in the Koniusza, Radziemice and Słomniki communes is 1.65-1.86 g $100g^{-1}$ dm, compared to 1.35-1.56 g $100g^{-1}$ dm (average for 2008-2015) in garlic harvested in Eastern Poland, which is indicative of the specific characteristics of the place as well as the soil and climatic conditions that are particularly favourable for the cultivation of garlic and have a positive effect on its flavour. This garlic has an intense smell and distinct taste, which makes it more often used for culinary purposes.

8.2. Historical and human link

Prehistoric times

Krakow is one of the oldest Polish cities, but the area of the former Słomniki demesne has a much longer history. In three communes near Krakow, namely Koniuszy, Radziemice and Słomniki, the oldest remains of human life come from eight thousand years ago, from the Neolith. Settlers who came to these areas from the south found a suitable place to live here. On their fertile soil, they were able to develop agriculture and breeding. Archaeological research conducted by Stanisław Jan Czarnowski revealed numerous objects from the Stone Age, utility tools and remains from the Palaeolithic. Traces of Neolithic settlements were discovered in Wężerowo and Prandocin, while in Januszowice and Łętkowice, Bronze Age burial mounds and flat graveyards were found. Treasures found in Prandocin and Kacice testify to Roman influence in the area. It is also worth mentioning the presence of Celts who settled nearby and introduced numerous agricultural innovations and popularised them in the surrounding settlements.

At the dawn of Poland's history

Based on the findings of physiographic and archaeological research as well as fragmentary written sources it can be established beyond any doubt that these are the oldest settlement areas of the former Lesser Poland and probably the Vistulans' state from before the Piast dynasty. The primeval settlement of these lands is also confirmed by the early 11^{th} and 12^{th} century foundations of churches in Koniusza, Prandocin and Niedźwiedź. In 989, the areas in the Szreniawa River valley were annexed to the state of Mieszko I. They became the property of the king. Polish monarchs influenced the course of economic and social life of the town and its immediate surroundings through the relevant state authorities. This demesne was part of the property of the Krakow magnates and, together with it, it was a source of the income of the monarch's treasury, also known as the income of the royal table. The local dwellers were the royal servants and performed assigned tasks for the royal court. For the work performed, the ruler granted land so that the inhabitants of the settlement and their families could obtain food they needed. Land could be inherited but could not be sold. Cereals and plants needed to feed animals were sown in the fields, while in fertile home gardens vegetables, fruit and spices needed for culinary purposes were grown. The areas along the Szreniawa River and the immediate vicinity were one the most densely populated areas in Poland during the reign of the Piast dynasty. Such dynamic development was favoured by fertile soil, a mild climate, as well as two salt routes running through Słomniki and *via regalia*, i.e. a great road connecting the Baltic Sea with Hungary. These routes had been used for ages, as evidenced by numerous mentions in royal documents and documents of Krakow's townspeople. Convenient

communication with the capital of the country, the salt mines in Bochnia and Wieliczka, and an open window to the world through the connection with the Krakow-Toruń road fostered intensive exchange of goods, development of crafts and agriculture.

It all started in Słomniki

King Casimir the Great founded the town of Słomniki in the mid-14th century as a result of the intensive development of Krakow and the settlement itself. The town was granted 10 Środa Śląska fiefs, i.e. approximately 160 ha of land, which was much less than towns were usually granted when being founded, but the land was covered by fertile soil and was big enough to be distributed among all those newly settling in the town. Effective development of rural space made it possible to provide food to those who received a building plot and a garden. Both Słomniki and nearby Proszowice were royal towns and estates of Krakow's rulers. According to *"Rachunki wielkorządowe krakowskie"* (Krakow's accounts) all food products supplied to the royal court came from this area. The area was famous for its excellent beer, delicious cold meats, fresh vegetables and spices that were catered to royal courts. The fertile soil of this region favoured the cultivation of wheat, rye, hops and green buckwheat. Fruit trees and bushes were grown in the gardens, so were many species of vegetables that were brought there along various routes, including garlic.

The history of garlic

In western and central Asia, garlic had been grown for 5,000 years for medicinal and culinary purposes. It was spread by ancient people throughout the Mediterranean basin because neither the Greeks nor the Romans could imagine food without this excellent spice. Its presence was also found in the legendary gardens of the King of Babylon. The oldest mentions of garlic date back to Neolithic times, but we can also find it in the holy books of the Hindu Vedas, Sanskrit, ancient Roman literature, and the Bible. The earliest mention of garlic was revealed while reading cuneiform writing. The values of garlic were also appreciated by Jews. Having left Egypt, they wandered through the desert, tormented by hunger, and recollected sadly their prosperous life in Egypt: "We remember the fish we ate freely and without cost in Egypt, the cucumbers, melons, leeks, onions, and garlic" – Old Testament, Book of Numbers. The consumption of garlic is recommended to Jews by the Talmud, a great legal code, an ethical treatise and a list of parables, thanks to which Jews preserved their culture, religion and distinctiveness, and did not vanish in exile, living for centuries among strangers. The Talmud recommended garlic to warm the body, increase fertility and get rid of intestinal parasites. The Romans believed that this plant was the source of the physical fitness of their legions. Hippocrates, the father of medicine, recommended garlic for respiratory and diuretic problems. The Arabs used it as an antidote for all poisons and poisonous reptile bites.

Garlic probably came to Central Europe in the early Middle Ages with the Tartar invasions, but wild forms of Carpathian garlic or garlic varieties brought by merchants from the East could have been grown much earlier.

The programme for the protection of genetic resources of vegetable plants, that has been implemented for many years and is part of the national biodiversity protection system, confirms that many garlic phenotypes come from southern Poland. In 1986, a field plantation of common garlic was established at the Institute of Horticulture. The plantation comprises 550 garlic varieties and its local populations that are the gene base for further research and preservation of diversity.

There are several hypotheses regarding the beginning of garlic cultivation in this area. The oldest one dates back to the Neolithic period, but the documented history dates back to the 13th century, i.e. the arrival of the Cistercians. Undeniably, the areas along the Szreniawa River and the eastern bank of the Vistula River were settled as early as the Neolith by comers from the south who had been growing garlic for a long time and had known its taste and healing properties, but there is no evidence that it was also grown in this area. Garlic may also have come to the Słomniki region with a group of Celts who settled in these fertile land and popularised new plant species and modern agriculture, as the Latin name of garlic, i.e. *Allium sativum*, comes from the Celtic words *all* (spicy, burning) and *sativum* (cultivated), which may indicate that this ancient people not only knew this plant but also cultivated it. The hypothesis of its Tatar origin in this region is also possible, as the town of Słomniki was plundered three times by the Tatar horde in the 13th century. It is known for certain that garlic was present in the Szreniawa River basin at the time of the arrival of the Cistercians who contributed to its spread. In 1222, Iwo and Wiesław Odrowąż brought Cistercian grey friars to Prandocin. The friars chose Kacice for their seat, and the founders donated them the settlements of Prandocin, Kacice, Sędowice and Januszowice. After settling in Kacice, the Cistercians established a grange that they meticulously developed in later years after translocation to Mogiła. In Prandocin, there was a castle garden founded by Prędota the Old, the progenitor of the Odrowąż family, in 1126, and the monks, full of commitment and persistence and having professional knowledge, decided to outshine its exquisiteness and beauty, turning their granges into the most beautiful and affluent farms of that time. This is what Jan Długosz wrote in the 15th century about the Cistercian estates in Prandocin:"The Mogiła monastery (...) created an outstanding grange, the like of which can hardly be found" (Biczysko A., *Początki Cystersów Prandocin/Kacice – Mogiła* [The beginnings of the Cistercians Prandocin/Kacice – Mogiła]). The monks reclaimed wet meadows, established mills, developed fishing, and popularised a new way of farming among peasants. Those managing monastery vegetable and herb gardens were guided by the idea that each community should be self-sufficient. The symbolism of the plants grown by the monks was very important because they were a gift to guests arriving at the monastery.

Garlic as medicine

Thanks to the activities of St Hildegard of Bingen, an abbess and a famous herbalist whose recipes for healing potions are known to this day, the friars used the list of plants recommended by Hildegard in their household. Due to its medicinal and spice properties, garlic became one of the most desirable crops in medieval homestead gardens. At that time, only very affluent people could afford the luxury of using spices, while the poor used generally available products to add flavour to their dishes. Therefore, by growing garlic in the garden, they had an easily accessible spice as well as a cure for many ailments. Simon Sirenius, professor of the Krakow Academy, botanist, doctor and researcher of the medicinal properties of plants, described in his work published in 1613, 756 species of plants found in southern Poland. His *"Zielnik herbarzem z języka łacińskiego zowią..."* [Herbarium] mentions cultivated garlic over a hundred times as a plant easily available in the vicinity of Krakow and extremely valuable from a medical point of view. Syreniusz emphasises in particular the importance of garlic in folk medicine, where it has been used for centuries in combination with honey and milk to treat all respiratory diseases in peasant children. A German scientist travelling around Europe in the 17th century wrote in his travel notes with surprise that garlic

was eaten in Poland and Russia not only by the common people, but also by the nobility and even the king and tsar because many dishes served on the royal table were seasoned in this way, as evidenced by the characteristic smell. Similar opinions were confirmed in Johann Sigismund Elsholtz's dietary lexicon from 1682, where it is written that in Poland and Moscow garlic was found on aristocratic tables, unlike in Germany, where it was used only in peasant medicine. In his book entitled *"Roślin potrzebnych, pożytecznych, wygodnych, osobliwie krajowych albo które w kraju pożyteczne być mogą, utrzymanie, rozmnażanie i zażycie"* [The maintenance, propagation and consumption of plants that are needed, useful and convenient and that are domestic or may be useful in the country], published in Warsaw in 1772, Fr. Kazimierz Kluk described all medical uses of garlic, applied to modern times. Fr. Kluk also described the propagation and cultivation methods.
Garlic, like many other food products, could be easily sold at local markets and fairs in Słomniki, Proszowice and Wawrzeńczyce.
"Rachunki Wielkorządowe Krakowskie" (J. Tomaszkiewicz, Rachunki wielkorządowe krakowskie) proves that the royal court also used – for centuries – agricultural products from the Słomniki demesne. Rye bread, wheat bread, beer, groats, butter and cheese as well as apples, pears, mushrooms, onions and other spices from the garden were included on the court shopping list in the archives of the Jagiellonian Library. They were already ordered for Elżbieta Łokietek, sister of Władysław Łokietek, and in later centuries for Casimir the Great, Władysław Jagiełło, and even for Bona Sforza when she resided in Niepołomice near Krakow. These lands were called the estates of the royal table for a reason.

International fame of 'czosnek galicyjski'
Food products from the fertile areas of the Szreniawa River valley were transported to distant regions of Europe. Merchants coming to Słomniki on their way to buy salt from the Wieliczka and Bochnia mines purchased also other agricultural goods demanded where they came from. Legend has it that people used to come to local markets and fairs to buy a lump of salt and a clove of garlic. The fame of garlic must have been considerable because Jan Chryzostom Pasek jokingly writes in his *"Pamiętniki"* [Memoirs] that it was because of garlic that the Transylvanian Prince György Rákóczi invaded Poland in 1657. Słomniki was severely damaged during the invasion and many of its residents lost their lives. Pasek describes this event as follows:
"That Hungarian brigand, the mad Rákóczy [György Rákóczi], had itchy skin – peace having made him restless – so he took a fancy to Polish garlic, which somebody, in jest, had bragged about for supposedly tasting better than Hungarian. Just as Xerxes took up arms against Greece ob caricas Atticas, so Pan Rákóczi, with similar fortune, upon recruitment of 40,000 Hungarians and Moldavians and alterum tantum Cossacks, set out for Poland to get some garlic; they gave him the garlic all right and a taste of bitters too. For no sooner had he crossed the border, when Jerzy Lubomirski rode into his land (...). Finally, upon taking a large ransom from Rákóczi's mother, he went off to talk the son out of eating up all the garlic; at least he could leave some for propagation. We of Czarniecki's division also served then as well as we could; and so glad was Rákóczi to eat his fill of garlic that he lost his entire army, himself falling into our hands (...). The ransom being forfeited, Rákóczi himself (...) fell into

despair and died. So that's garlic for you!" (M. Markowicz, Najazd Rakoczego na Polskę 1657 [Rákóczi's invasion of Poland in 1657])[4]

Zbigniew Morsztyn, a writer of the Baroque period, who also took part in the siege of Krakow during the Swedish deluge, wrote a poem in which he praises the benefits of garlic and ranks it, together with onion and radish, first among spices and medicines:

Suchar i wędzonka to Sarmackie potrawy
Czosnek, rzodkiew, cebula – to wszystkie zaprawy
Te na wszystkie choroby doświadczone leki
Nie jadali pigułek, nie znali apteki
Ni proszków ni ulepków, starzy Sarmatowie
A żelazne przy sercu lwim miewali zdrowie
(Z. Socha, Antologia poezji barokowej [Anthology of baroque poetry])

Garlic in cookery books

"Compendium ferculorum", the first cookery book published in Poland in Krakow in 1682, mentioned garlic as a spice used in many dishes. The author of the book, chef Stanisław Czerniecki, was a courtier and servant of the Krakow salt mine administrator Aleksander Michał Lubomirski of the Szreniawa coat of arms. The manor in Wiśnicz, which was the seat of the Lubomirski family, benefited from the harvests of the fertile land of Słomniki, from which the family originated. The author of *"Compendium felculorum"* described the cuisine of magnates, free of financial constraints and aiming to dazzle and amaze the invited guests. In Czerniecki's recipes, garlic appeared as often as limonium, which was essential in old Polish cuisine. It was the basic ingredient of one of the most popular sauces recommended for fish and meat. The additament for fish dishes begins with a marinade with garlic, and in the condiments for baked meat, although anchovy butter is mentioned first, the next two items concern garlic sauce. Chef Czerniecki seasoned with garlic also capons and broth, and all noble kitchens of the 17th century followed his example. Fresh products delivered from the Słomniki region complemented the taste of exquisite dishes on the tables of the aristocracy and the king. The following centuries were not so favourable for the economic development of Słomniki and the surrounding area. A particularly considerable impact was exerted by the partitions, as the new borders hindered the flow of goods and restricted trade. During the partitions and immediately after independence was regained, agriculture was the main source of income for the local population. It was primitive agriculture lacking latest professional knowledge, machines and propagation material that would ensure an adequate yield. At that time, people of Jewish origin, to whom the royal lands had previously been inaccessible, began to arrive in Słomniki and the surrounding area. Large Jewish communities were established in Słomniki, Proszowice and Działoszyce. It was for the Orthodox Jews that local peasants increased their garlic yield from garden crops to field crops. The Talmud recommended that Jews eat this vegetable for various reasons, including medicinal ones. In nearby Proszowice, a butchers' guild, known for centuries for its products, developed very dynamically and considered garlic, salt and pepper as the primary spices. Currently, two traditional cold meat products that contain garlic in the recipe and come from this area have

[4] Translation from *Memoirs of the Polish Baroque: The Writings of Jan Chryzostom Pasek, a Squire of the Commonwealth of Poland and Lithuania*; edited and translated by Catherine S. Leach

been registered. These are Proszowice sausage from a jar and meat from a jar from the vicinity of Proszowice.

The Galician history of garlic

A significant role in the development of agricultural culture in the area concerned was played by the Kielce Agricultural Society, whose branch was established in 1898 in Miechów on the initiative of Gabriel Godlewski, Stefan Kozłowski and Bogusław Kleszczyński. It was then that the first peasant organisation called Jutrzenka was established. Machinery rings have always been a form of social and economic activity of subsequent generations of peasants in solving the production and social problems of the countryside. During the partitions and immediately afterwards, they were a source of the knowledge of modern agriculture for the rural residents, centres where patriotism was strengthened, and constituted a social base for establishing other organisations. In the Austrian partition called Galicia, the Education and Labour Society was established, to be transformed in 1882 into the Machinery Ring Society in Galicia. The first machinery ring was established in Bukowa Wola near Miechów. In 1905, Stefan Rafał Kozłowski founded the rural Machinery Ring in Przybysławice. By 1922, the Society had established 22 Machinery Rings with 1,450 members.

Garlic Producers Association

In 2007, another attempt to organise garlic producers – this time in the form of a garlic producers association – was made. The founding meeting was held in Słomniki on 8 March 2007 at the initiative of the Krakow Poviat Council of the Lesser Poland Chamber of Agriculture. At the meeting, the organisation's statute was adopted and the development of the association's logo was commissioned (Photo 4), unfortunately the initiative did not stand the test of time.

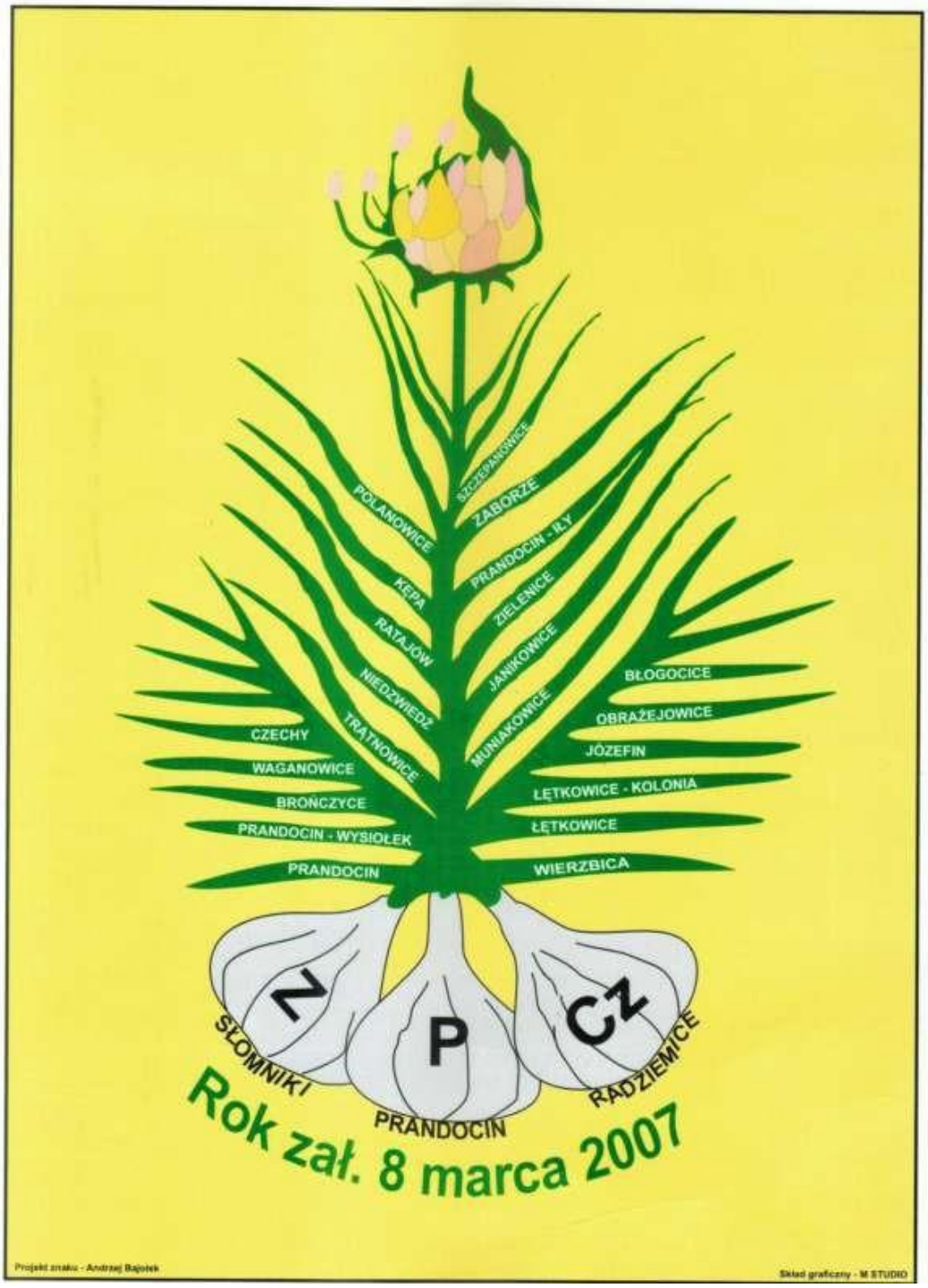

Figure 2. Logo of the Garlic Producers Association

Garlic cultivation

The productivity in agriculture was significantly increased by the use of certified material. After the agricultural exhibition that took place in Kielce in 1898, peasants from the Miechów region decided to implement a similar project to their own area. At the exhibition in Kielce, they were delighted mainly by "(...) seeds that they had never seen before and that they wanted to grow on their land". Fr. B. Kozłowski, F. Zdziechowski and B. Kleszczyński organised an agricultural exhibition in Miechów in 1903, modelled on the earlier exhibition in Kielce, in order to encourage local landowners to use new plant varieties and certified

propagation material in cultivation, as well as modern farming methods. Many specialised estates in the Słomniki and Proszowice region were engaged in the selection and growing of new plant varieties. The oldest centre for breeding seeds and other propagation material in the country, founded by Julian Dobrzański in 1870, was located in Budzieszowice. This centre dealt mainly with the breeding of sugar beet seeds due to the proximity of the sugar factory in Kazimierza Wielka, but it also undertook activities related to other plant species. In 1926, after organisational transformation, it was moved to Radziemice and merged with the breeding farm of the Kleszczyński brothers. Dr. Teofil Szańkowski, a breeder of new plant varieties who worked in this farm, was the first President of the Agricultural Society in Miechów. After World War II, all seed farms came under the supervision of the state, but in the communes of Słomniki, Koniusza and Radziemice, there were still seed plantations on many farms, producing material for the Union of Plant Breeding and Seed Science in Warsaw, and currently for Krakowska Hodowla i Nasiennictwo Ogrodnicze Polan Sp. z o.o. The propagated species also included garlic, especially its 'Harnaś' and 'Arkus' varieties. As a result of numerous changes that took place in modern agriculture, owners of small farms were looking for crops they could engage in to obtain satisfactory profits, as the current crop structure did not ensure sufficient earnings. Garlic turned out to be precisely what they were looking for. Adequate climatic and soil conditions that favour large yields and the unique aroma of garlic from this area contributed to satisfactory crops and financial success. In this way, the garlic production area expanded from the Słomniki region to the area that has been administratively divided into three communes since 1997.

Garlic Festival

The fragrant rose, as some people playfully call garlic, has gained many admirers around the world who organise celebrations in its honour in the regions where this vegetable is produced. The most famous celebrations in the world include the garlic harvest in the town of Gilroy, California, called the world capital of garlic. In Europe, such celebration is organised in the city of Arleux, France, on the border with Belgium. In Provence, in the town of Uzès near Avignon, the largest European garlic fair takes place.

The Lesser Poland Garlic Festival (Photo 4) is organised at the turn of July and August by the two communes of Słomniki and Radziemice. Since 2007, Prandocin has been visited by numerous exhibitors, garlic producers, agricultural machinery manufacturers and agricultural agencies, as well as folk artists who present their artistic handicrafts. The greatest emotions are aroused by beautifully decorated stands of rural women's associations, filled with garlic-scented dishes. In 2011, rural women's associations supported by the Municipal-Communal Cultural Centre published a cookery book entitled *"Kuchnia pachnąca czosnkiem. Potrawy regionalne ziemi słomnickiej"* [Kitchen smelling of garlic. Regional dishes of the Słomniki region]. Recipes for garlic tincture, ribs in garlic sauce, apple bigos and garlic in chocolate have delighted many gourmets, who come to these garlic harvest festivals in increasing numbers. Garlic Days are an opportunity to exchange experiences, enhance agricultural knowledge, and above all, have fun and constantly discover new properties of this extraordinary plant.

Photo 4. Lesser Poland Garlic Festival

9. Control:

Główny Inspektor Jakości Handlowej Artykułów Rolno-Spożywczych [Chief Inspector of the Agricultural and Food Quality]
00-930 Warszawa ul. Wspólna 30 22
623-29-00 fax 22 623-29-99
✉ sekretariat@ijhars.gov.pl

10. Labelling:

Specific rules on the labelling of the agricultural product or foodstuff should be provided, if any.
NONE

11. Specific requirements introduced by applicable regulations:
Please indicate whether there are any specific requirements imposed by European Union or national legislation concerning the agricultural product or foodstuff concerned.
NONE

12. Additional information:
Please provide any additional information regarding the agricultural product or foodstuff concerned.
NONE

13. List of documents attached to the application:
References:
"Gleboznawstwo", B. Dobrzański Warszawa 1970
"Charakterystyka rzek i dolin Niecki Nidziańskiej", J. Dynowska, PAN 1986.
"Rozwój geomorfologiczny wschodniej części Wyżyny Miechowskiej", W. Gilewska, PAN 1958.
"Przydatność rolna gleb Wysoczyzny Proszowickiej", W. Gondek, Puławy 1973.
"Klimat Niecki Nidziańskiej", J. Paszyński, M. Kluge 1986, Studia ośrodka dokumentacji fizjograficznej.
"Zmiany środowiskowa geograficznego na obszarach lessowych Wyżyny Miechowskiej i Opatowsko-Sandomierskiej", J. Jersak, Z. Śnieszko, Katowice 1987.
"Zarys dziejów powiatu proszowickiego", F. Kirk.
"Historia organizacji społeczno-rolniczych w województwie kieleckim", S. Borkiewicz, Kielce 1934 "Kielecczyzna. Rozwój gospodarczy regionu", W. Kawalec, Warszawa 1962.
"Proszowice .Zarys dziejów do 1939 roku", F. Kirk, Kraków 2000.
"Przy wielkiej drodze", J.S. Kozik ,M. Wyżga, Kraków 2012.
" Herby Rycerstwa polskiego". B. Paprocki, Warszawa 1993.
"Rachunki żupne bocheńskie", J. Karwańska, Kraków 1939.
"Rachunki Wielkorządowe Krakowskie", J .Tomaszkiewicz, Kraków 1992.
"Najazd Rakoczego na Polskę", M. Markiewicz, Inforteditions 2011.
"Początki Cystersów Prandocin/Kacice – Mogiła", A. Biczysko, Kraków 2009.
"Compendium ferculorum", S. Czerniecki, Łańcut 2010.
"Monografia Słomnik", parts I and II, K. Skrężyna, Słomniki 2021 and 2015.
"Warto uprawiać czosnek", R.W. Doruchowski, Warszawa 2011.
Hasło Ogrodnicze:
02/1999 "Jak uprawiać czosnek", R. Nurzyńska-Wierdak.
09/2003 "Choroby czosnku i ich zwalczanie", S. Mazur.
11/2003 "Czosnek. Uprawa form ozimych i jarych", I. Żuradzka.
01/2012 "Jak chronić czosnek przed chwastami", A. J. Dobrzański.
02/2012 "Na plantacji czosnku", Ł. Knafel.
05/2014 "Choroby czosnku", J. Nawrocki.
Najda A., Błaszczyk L., Winiarczyk K., Dyduch J., Tchórzewska D. 2016. Comparative studies of nutritional and health-enhancing properties in the "garlic-like" plant *Allium*

ampeloprasum var. *ampeloprasum* (GHG-L) and *A. sativum*. Scientia Horticulturae, 201, 247+255.