**AMITY EDUCATIONAL RESOURCE CENTRE**

**YRoNS 2019,**

**Amsterdam, Netherland**

**PROJECT DETAILS FORM**

**School Name: Gimnazija Jurija Vege, Idrija**

| S.No | Team Members | Team Leader | Project Title | Abstract (Max 200 words) | Teacher Advisor |
|---|---|---|---|---|---|
| 1 | Patricija Tušar | Patricija Tušar | **UV Protection Properties of Cotton and Polyamide Dyed with Dye Extracted from Staghorn Sumac Drupes** | The Staghorn Sumac is a plant species originating in the Eastern US. It is widely cultivated as an ornamental throughout the temperate world. However, in Europe, it is considered an invasive species.<br>The purpose of our project is to use the dye extract of an invasive plant species to increase the protective properties of textiles against ultraviolet (UV) radiation. Suntan and sunburn are familiar effects of over-exposure of the skin to UV radiation, along with higher risk of skin cancer. The UV-protective ability of textiles can be better than sunscreens but not all textiles provide significant UV protection. Some dyes absorb light also in UV region and when applied onto textiles, they increase the UV-protective ability of textiles. During the project we collaborated with Marija Gorjanc from the Faculty of Natural Sciences and Engineering in Ljubljana.<br>In our experimental work we extracted dye from Sumac drupes under different pH values and dyed cotton and | doc. dr. Marija Gorjanc, Magdalena Klasinc |

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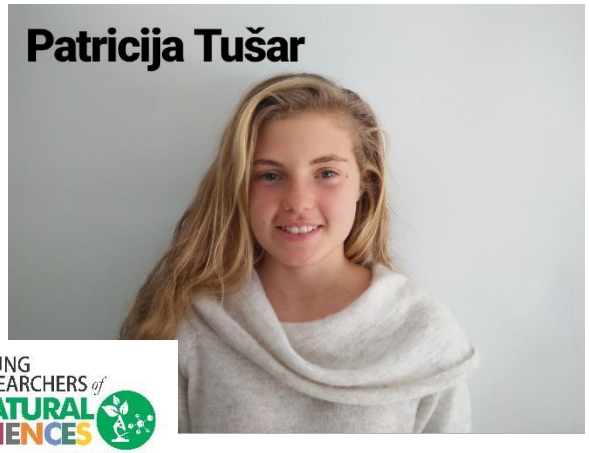
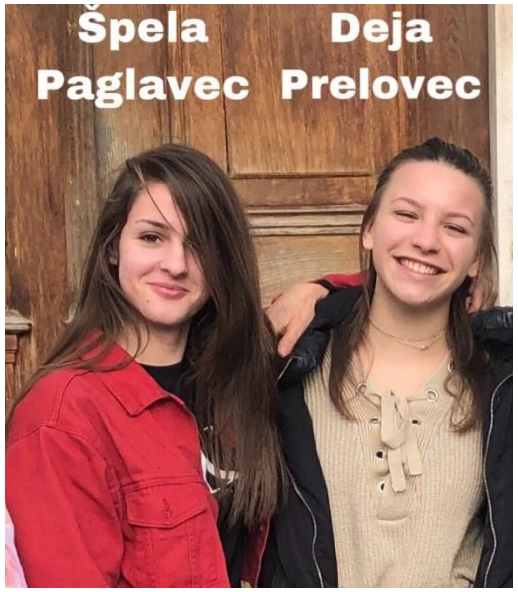
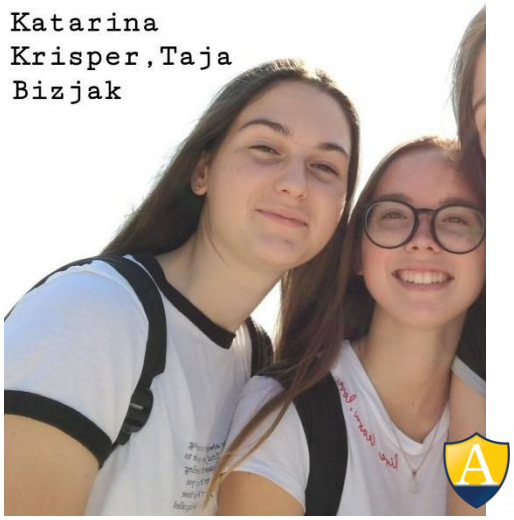
| | | | | polyamide. The UV protection and light-durability of samples will then be measured. After we conclude the measurements we expect the results to give us at least one viable option that we could potentially offer to consumers. With this we would make use of an invasive plant species, remove it from the environment and offer the public a harmless, natural dye that can protect our skin against UV radiation. | |

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AMITY INTERNATIONAL SCHOOL AMSTERDAM

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|---|---|---|---|---|---|
| 1<br>2 | Katarina Krisper<br>Taja Bizjak | Taja Bizjak | **Determining the amount of Anthocyans in the juices from different manufacturers** | Anthocyans are water-soluble pigments that, depending on their pH, may appear red, purple, or blue. We can find them in plant cell's vacuoles. In addition to acting as antioxidants and fighting free radicals, anthocyans offer anti-inflammatory, anti-viral, and anti-cancer benefits.<br>Having that in mind, we became very interested in this topic and so we wanted to gather the most basic information on Anthocyans including their structure and influence of different pH on them. We were also curious if manufacturers list the real amount of Anthocyans in juices and if there are differences in amount of Anthocyans in juices from our local stores and organic ones.<br>In our research paper we will test juices from six different fruits and vegetables (blackcurrant, apple, cherry, grapes, beetroot, aronia). We will be using anthocyans pH differential spectroscopic method to determine the amount of Anthocyans. | prof. dr. Branka Mozetič Vodopivec, Irena Česnik Vončina |

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|---|---|---|---|---|---|
| 1<br>2 | Deja Prelovec<br>Špela Paglavec | Deja Prelovec | **Durability to light, washing and rubbing of polyamide dyed with Japanese knotweed dye** | The Japanese knotweed is a plant species from Japan. It is widely cultivated around the world. However, in Slovenia it is considered an invasive species.<br>The purpose of our project is to use the invasive plant species as a textile dye, dye the polyamide and test its durability to light, washing and rubbing. Polyamide is a synthetic textile material used for many products, i.e. socks, swimwear, sportswear, tents, umbrellas, etc. Due to its chemical structure it can be dyed with natural dyes.<br>In our experimental work we extracted dye from Japanese knotweed roots (under neutral and acid conditions). Prior to dyeing, different treatments of polyamide fabric samples were performed in order to change the colour of the final textile and to increase the colour durability to light, washing and rubbing. The colour of samples was measured before and after durability test. When we calculate all the measurements, we expect the results to be positive and useful. We would like to make use of the invasive plant species, remove it from the environment and offer people a natural dye with good colour durability. | doc. dr. Marija Gorjanc, Magdalena Klasinc |