

## Annabelle, Nicola, Linda...



Annabelle, Nicola, Linda, Ditta, Leyla, Laura, Violetta... Some of you might be starting to think that today's blog is about new trends for girls' names. How wrong! This blog post is all about **potatoes** (*Solanum tuberosum L.*). This plant – which comes from the Andes – is a member of the solanaceae (nightshade family), just like tomatoes (*Solanum lycopersicum L.*).[1].

Currently, some 4,000 potato varieties are known. In German-speaking countries, each variety has a pleasant sounding name – mainly women's names! The individual varieties can be distinguished in terms of shape, colour (yellow flesh, red skin, purple, etc.), ripening time (early, late potatoes) and cooking properties (waxy, floury). Exotic varieties such as the 'Königspurpur' in Germany (see picture to the left above) are often more vulnerable to diseases and less profitable in terms of yield. For this reason they are rarely found in supermarkets but rather at specialised vegetable markets or in farm shops. The unusual varieties not only look spectacular but they also have an exceptionally intense taste and are sometimes richer in nutrients than conventional potatoes. The purple flesh of the Königspurpur variety contains, for example, anthocyanins which give them their colour and have numerous health-promoting properties – they can even protect against cancer [2].

## Health and nutrition



Although potatoes consist of some 80% water they are an exceptional form of nutrition. It could almost be said that the potato is a single food source which contains everything we need. Potatoes are a valuable plant-based source of protein – an ideal alternative to meat and fish, especially for cancer patients who need to consume sufficient protein. By combining potatoes with egg or quark, an extremely high biological value of protein can be achieved. The higher this biological value, the better the body can synthesise new protein [3].

Potatoes also contain, for example, a lot of vitamin C, potassium and secondary plant substances. Vitamin C is important for the immune system and it also has an antioxidant effect, which means it traps free radicals. Consequently, vitamin C protects the body against oxidative stress and possibly even against cancer [3]. Potassium is especially important for blood clotting and maintenance of healthy bones [3].

## In the kitchen



There are so many ways to prepare potatoes – boiled, mashed, roasted, as röstis, gratins, dumplings, chips or crisps to name but a few. From a nutritional science perspective, the health value of the various potato dishes varies considerably. Potatoes can be eaten boiled, mashed, sliced as well as in a huge variety of other ways. The great German poet and philosopher, Johann Wolfgang von Goethe, was a big fan of them in various forms. We should be aware, however that the more the potato is processed and the more fat that is added, the more its nutritional-physiological value, which is inherently very high, decreases. In other words, the best way to eat potatoes is to leave them unpeeled and boiled whole. This form of cooking contains the highest amount of nutrients. The worst preparation methods, in contrast, are chips, croquettes and crisps as a lot of fat is used.

Potatoes should be stored in a dark, cool (5 – 8 °C) and dry place. Any shoots or green areas should always be removed before cooking. These contain high concentrations of the glycoalkaloid solanine – a bitter compound – which protects the plant against pests that feed on them, parasites and diseases. In humans very high concentrations of solanine can lead to mild symptoms of poisoning such as headaches and nausea. When the precautionary measures mentioned above are followed, poisonous concentrations

of solanine are not an issue when eating potatoes [4].

Due to the high nutrient content of potatoes, eating plenty of them as part of a balanced diet is strongly encouraged and – if the preparation recommendations are followed – they present no health risks. For anyone who now has an appetite for a potato dish we have a small culinary treat for you. Michelin-star chef Hans Haas has created a potato recipe exclusively for the Munich Tumour Centre.

**Sources:**

- [1] J. A. Massard, „Europa entdeckt die Kartoffel – 300 Jahre Kartoffel in Luxemburg,“ Lëtzebuenger Journal, Jan. 2009.
- [2] D. McClements, H. Xiao, „Designing food structure and composition to enhance nutraceutical bioactivity to support cancer inhibition.,“ Semin Cancer Biol., 6 Jun 2017.
- [3] H. K. Biesalski, P. Grimm, S. Nowitzki-Grimm, Taschenatlas Ernährung, Stuttgart: Georg Thieme Verlag, 2015.
- [4] Deutsche Gesellschaft für Ernährung, „Solanin in Kartoffeln,“ DGEinfo, pp. 23-25, Feb 2010.