

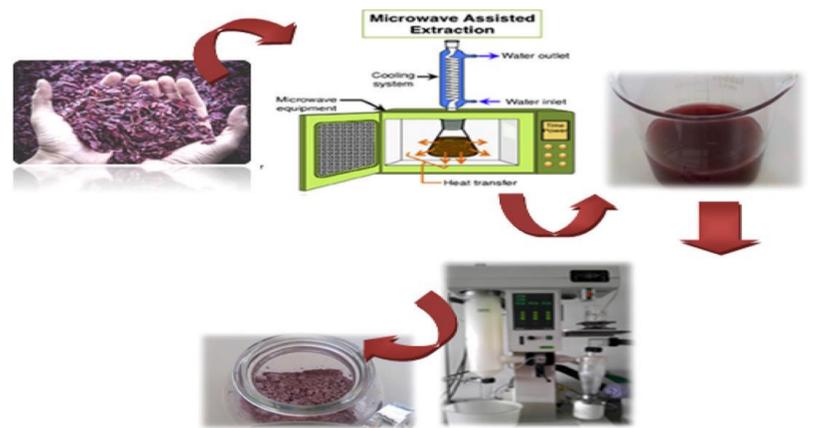
Complex using of the viticulture by-products in processed meat products

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Introduction

Nowadays using of the viticulture by-products can play key role as natural additive with antioxidant effect for favourable influence of phenols on human health. Also as an agent to stabilize the color of meat products; however, usage of these additives at high levels could lead to toxicity and cancer originating from the formation of nitrosamines. Currently, application of natural preservatives in order to reduce the nitrite content in meat products is increasing.



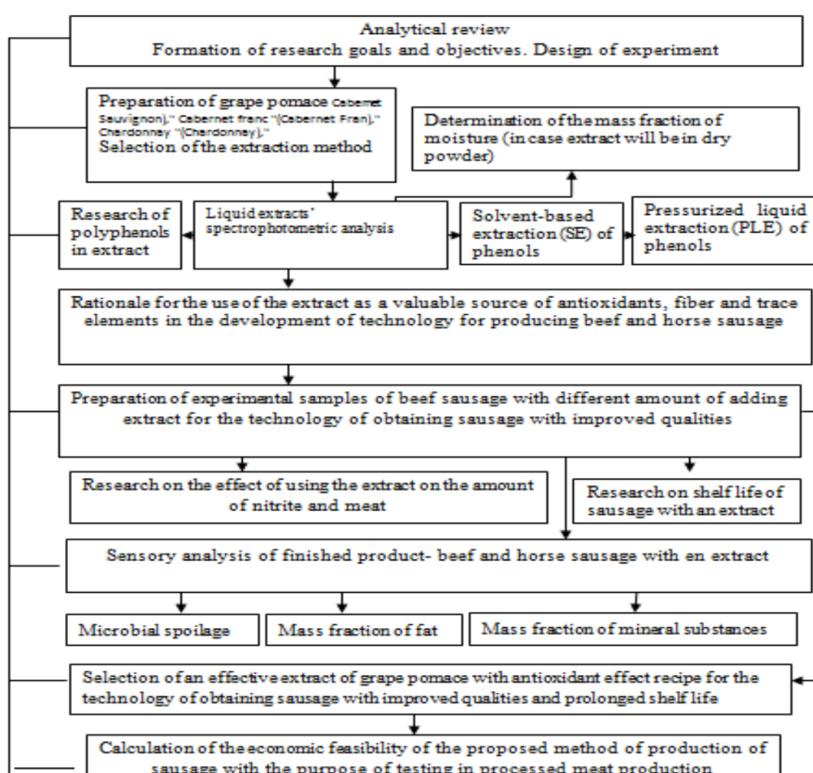
Materials and methods.

As an object of research, will be used extract of grape pomace of local grape varieties: *Taifi*, *Rcaceteli*, *Muscat*, *Cabernet Sauvignon*, *Cabernet Fran*, *Chardonnay*.

In accordance with the purpose of the research, there are following objectives and methods of research:

- Preparation of extract of three types of grape from local winemaking industry
- Indication of effective way of extraction of grape pomace for the most appropriate saving antioxidant effect
- Obtaining quantitative and qualitative characteristics for the use of the extract as a valuable source of antioxidants, fiber and trace elements in the development of technology for producing sausage
- Preparation of experimental samples of sausage with different amount of adding extract for the technology of obtaining sausage with improved qualities: 1. Microbial spoilage; 2. Mass fraction of fat; 3. Mass fraction of mineral substances
- Selection of an effective extract of grape pomace with antioxidant effect recipe for the technology of obtaining sausage with improved qualities and prolonged shelf life

Structure of research:



1. Ways of preparation extract from viticulture byproducts

Grape (*Vitis vinifera*) is one of the largest fruit crops in the world, with an approximate annual production of 61 million metric tons (FAO STAT Database). The main by-products are collected during destemming (stems), grape crushing, and pressing (skins, seeds, and lees). Grape pomace consists mainly of peels, stems, and seeds and accounts for about 20% of the weight of the grape processed into wine. Recent investigations have stressed the importance of by-products from wine processing as plant materials particularly rich in a wide range of polyphenols. The effect of drying temperature (60, 100, and 140 °C) on the polyphenols' content and antioxidant activity of red grape pomace peels was studied.

2. Application of extract of the viticulture by-products with antioxidant effect in processed meat products in Kazakhstan

Currently in South Kazakhstan one of the biggest wine industry it is recently opened Chateau Silk Alley which specializing primarily in production of white and red wine such as: Cabernet Sauvignon, Cabernet Fran, Chardonnay, Muscat, Rkaceteli, Taifi and etc. The capacity of the plant is 3000 tons per season, its capacity base offers a one-time supply of 3 million liters of wine material. Usually approximate quantity of by-products it is 30 % from whole amount.

The consumers in Kazakhstan like meat products for their characteristic sensory properties, while some prefer them for their durability and minimal storage requirements. Microbially, these are highly stable products. However, after an extended storage, another factor comes into play that ultimately causes spoilage of these products, and that is the oxidation of fats. This undesirable tendency in dry meat products is typically protected by the addition of antioxidants. The viticulture by-products can play key role as natural additive with antioxidant effect for favourable influence of phenols on human health.

Beef sausage is one of the popular foodstuffs, however, is vulnerable to microbial contamination, lipid oxidation, color changes and off-odors and flavours during storage. It was important to investigate the effect of grape seeds polyphenols extract (GPE) on chemical composition, lipid oxidation and microbial growth in raw beef sausage which was made with (0.01%) or without nitrite during frozen storage at -18°C for 3 months. GPE was added by 0.02 and 0.04% to beef sausage during making sausage.

Conclusion

Grape pomace extract can play key role as natural additive with antioxidant effect for favourable influence of phenols on human health.

In conclusion, assumptions made by many researchers allow us to propose the effectiveness of application of an extract as natural antioxidant with idea to reduce using nitrite and other additives to processed meat basically beef and horse sausage.

As a result we are planning to get extract from grape pomace from local winemaking industries and apply it in development of new product with improved qualities and with less harm to the health of people.