

Posudek vedoucího diplomové práce

Příjmení a jméno studenta: Stephen Boahene
Studijní program: N0722A130002 Polymer Engineering
Studijní obor: Polymer Engineering
Zaměření
(pokud se obor dále dělí):
Ústav: inženýrství polymerů
Vedoucí diplomové práce: Prof. Ing. Pavel Mokrejš, Ph.D.
Akademický rok: 2020/2021

Název diplomové práce:

Laying Hens Heads as an Untraditional Source of Collagen

Hodnocení diplomové práce s využitím klasifikační stupnice ECTS:

Kritérium hodnocení	Hodnocení dle ECTS
1. Aktuálnost použité literatury	A - výborně
2. Využití poznatků z literatury	B - velmi dobře
3. Zpracování teoretické části	B - velmi dobře
4. Popis experimentů a metod řešení	B - velmi dobře
5. Kvalita zpracování výsledků	C - dobře
6. Interpretace získaných výsledků a jejich diskuze	B - velmi dobře
7. Formulace závěrů práce	B - velmi dobře
8. Přístup studenta k diplomové práci	B - velmi dobře

Předloženou práci **doporučuji** k obhajobě a navrhuji hodnocení

B - velmi dobře

Komentáře k diplomové práci:

Master thesis deals with the possibilities of processing lying hens heads, a by-product of poultry industry, into gelatines. The aim of the thesis was to assess the possibilities to prepare pure collagen from hens heads and to process purified collagen into gelatines.

The contemporary state of the knowledge (Chapter I – Theory) corresponds to the topic of the Master thesis. The main part of the Introduction focuses especially on poultry by-products and their processing into fats and proteins. Statistical data referring to animals by-products in Africa, Asia, Europe and worldwide overview is provided. The layout of processing of collagen tissues into gelatines and testing physical and chemical properties of gelatines give a suitable background to the practical part of the thesis. At the end of this part, applications of gelatines in food- and other areas are provided.

Student evaluated the key findings from literature study and set up the aims of the practical part of the thesis.

In the experimental part, to study the influence of 2 selected processing parameters (gelatine extraction time and extraction temperature) on the degree of conversion and parameters of prepared gelatine fractions factorial schemes according to Taguchi design were used.

Gelatine yields were calculated. Gelatine(s) were tested for gel strength, viscosity, ash content, melting and gelling temperatures of gel, water and fat binding capacity, foaming capacity and stability, emulsification capacity and stability; according to standard testing procedures for gelatines. Evaluation of the results were carried out with Minitab software (Fujitsu, Japan).

The results of the Master thesis are beneficial to the practise. By suitable choice of processing conditions, hen paws by-product can be processed into low-medium (50–130) Bloom value gelatines with the degree of conversion up to 24 %.

At the end of the thesis (chapters 6.4 to 6.6) student compared and contrast his results with the results of similar studies, pinpointed the importance of his case study for further research and for the practice and proposed some applications of hen gelatines in food and pharmacy.

The goals of the thesis were fulfilled, the Master thesis is a genuine work and I recommend it for defence with very good grade.

Otázky vedoucího diplomové práce:

Ve Zlíně dne **18. 05. 2021**

Podpis vedoucího diplomové práce