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Additional Effectiveness Effectiveness on Fatty Change in Broiler Chicken Meat Sri Sulami Endah Astuti Health Analyst Departement, Health Polytechnic of Surabaya, Indonesia Abstract: Broiler meat is a source of animal protein for the human body, broiler chicken meat consumed by Indonesian people because the price is relatively cheap and easy to obtain, both in traditional markets and supermarkets. The purpose of this study is to analyze the fat content of broiler chicken that has been given various treatments that is soaking and boiling with added garlic as a fat- lowering agent. The results showed average fat content in broiler meat that was not treated by 21.73%, average fat content of broiler chicken soaked with water by 19.15%, average fat content of broiler chicken meat boiled with water of 7.88%, average fat content of broiler chicken soaked with water and added garlic equal to 7.58% and average fat content of broiler chicken boiled with water and added garlic equal to 3, 57%.From the results of data analysis with SPSS can be concluded that the most influential treatment of decreased levels of fat is broiler chicken meat boiled with water and added garlic. Keywords: Broiler Chickens, Fat, Garlic, Immersion, Boiling, Soxhlet Extractionlymphocytes 1. Introduction Meat is a source of animal protein that is beneficial to the human body such as the forming of body tissue and as one of the factors of blood clotting. In addition to containing meat protein also contains iron to prevent anemia. Meat can be processed into sharing the type of cuisine that is delicious to eat, so that meat-based dishes become the favorite food of people in the world. Meat consumption in the world includes poultry meat, fish meat and marine animals and other livestock meat such as cattle, buffaloes and even pigs. In Indonesia alone the meat that keeps increasing

its consumption every year is chicken meat, it is because the price of chicken meat is much cheaper when compared with the price of beef, other than that halal chicken meat to be consumed [1]. Seeing the majority of Indonesians who are Muslims, chicken meat can be the main choice in consuming meat. Broiler Chicken, which is the most widely consumed chicken meat in Indonesia, has a fat content of 21-25% per 100 grams. While the consumption of saturated fat should not exceed 35% of the total daily calories based on a 2000 calorie diet [2]. With excessive consumption of meat will certainly increase the consumption of saturated fats that are not good for the body because it can lead to increased blood cholesterol levels, increase the risk of heart attacks and lead to obesity in children and adults. An alternative solution to reduce the consumption of excessive saturated fats is modification of food processing, for example by the addition of natural and artificial substances that can reduce saturated fat levels in food. Garlic is a plant that has been proven to have many benefits for health, among others, can lower blood cholesterol, as a natural antibiotic and fat-lowering agent is good [3]. Benefits of garlic is due to aliine and alicine compounds found in garlic [4]. These aliine and alicine compounds can be used as fat-lowering agents in foods, in addition to being good fat-lowering agents aliine and alicine can also be used as a cure for dysentery. aliin and alicin compounds that are useful as agents of reduce fats in food is a compound that can easily be damaged when exposed to high temperatures, the damage of these compounds cause the efficacy of this active compound is reduced, so it is necessary to select the proper way of processing food so that active compounds aliin and alicin can work maximal decrease fat content in food. 2. Research Methods 2.1 Location and research materials Analysis of fat content will be done at laboratory with research material in the form of broiler chicken with skin without bone about 6 weeks old obtained from chicken slaughtering. Then weighing as much as 5 times each of 10 grams of data obtained processed by One Way Anova test. 2.2 Data Collection and Processing Samples in the form of chicken meat processed by separated meat and bone and then chopped until smooth. Then divide into five parts. The samples were given five different treatments ie not treated, soaked with water for 30 minutes, boiled with water for 30 minutes, soaked with water and added 10 grams of garlic for 30 minutes, boiled with water and added 10 grams of garlic during 30 minutes.Fatty acid analysis method used is the Soxhlet method by means directly using diethyl ether solvent. 3. Result and Discussion Table 1: Chicken Broiler Fats Examination Sample Treatment 1 Treatment 2 Treatment 3 Treatment 4 Treatment 5 A 21.95% 20.27% 8.61% 8.51% 4,25% B 20.93% 18.37% 7.62% 7.40% 3,28% C 22.33% 18.83% 7.42% 6.84% 3,20% Mean 21,73% 19.15% 7,88% 7,58% 3,57% Information: Treatment 1: the sample was not given any treatment, had an average fat content of 21.73% Treatment 2: the sample was immersed by using 100 ml of water for 30 minutes, having an average fat content of 19.15% Treatment 3: The sample was boiled using 100 ml of water for 30 minutes, having an average fat content of 7.88% Treatment 4: the sample was soaked with 100 ml of water and added 10 grams of garlic for 30 minutes, had an average fat content of 7.58% Treatment 5: Samples boiled with 100 ml of water and added 10 grams of garlic for 30 minutes had an average fat content of 3.57% Data analysis was done, normality test data with Kolmouji obtained p = o, 280 value at α = 0,05 mean data is normal distribution, while for homogenity of variance test obtained p value = 0,719 at α = 0,05 meaning homogeneous data. Furthermore, data analysis with One Way Anova, to determine the most effective treatment of the reduction of fat content in Broiler chicken, obtained sig value p = 0,000 at α = 0.005, meaning there is a change in fat content in broiler chicken meat. The different treatment pair continued with multiple comparison test with post

Hoc Test, it was found that the fat content in treatment 1 was different, with treatment 2, treatment 3, treatment 4 and treatment 5. In the treatment of 5 obtained the average of the most lemat content low. While in the treatment of 3 and 4 there was no significant difference. In treatment 1, the unadjusted broiler chickens were measured the fat content three times to obtain an average yield of 21.73%. This treatment is used as a blank that is to know the initial fat content in broiler chicken meat before being treated. High fat content in broiler chickens can be caused by the cultivation of broiler chicken with a relatively fast age resulting in chicken with meat with high water content and fat. In addition, the results of high fat content in broiler chicken meat can also be caused by the use of soxhlet method to measure the fat content in broiler meat, soxhlet method. In the treatment of 2 broiler chicken meat soaked with water for 30 minutes obtained an average fat content of 19.15%. This treatment was used as a control of treatment 4 (immersion of broiler chicken with water and added 10 grams of garlic for 30 minutes). Immersion of broiler chicken meat with water does not affect the decrease in fat content in broiler chicken meat, because in the water itself there is no compound or active substance that serves as a fat- lowering, in addition to the immersion process was not enough to reduce the fat content found in chicken broiler. In the treatment of 3 broiler chicken meat boiled with water for 30 minutes obtained an average fat content of 7.88%. This treatment was used as control of treatment 5 (boiling broiler chicken by using water and added 10 grams of garlic for 30 minutes). Boiling is one way to process broiler chicken meat in addition to make chicken meat becomes more tender boiling process is also used to reduce pathogenic bacteria contained in meat, the heat used in the boiling process causes some of the fat contained in the meat out, so that the fat contained in the meat moved to the water used to boil and cause fat content that is still contained in broiler chicken decreased. In the treatment of 4 broiler chicken meat soaked with water and added 10 grams of garlic for 30 minutes obtained the results of average fat content as much as 7.58%. This treatment is done to determine the effect of adding garlic to the decrease in fat content contained in broiler chicken meat. Decrease in fat content in broiler chicken meat can occur due to the active compounds allicin and alliin contained in garlic [5]. According to the World Health Organization (WHO), one fresh garlic clove contains allicin as much as 3- 5mg and alliin as much as 6-10mg, the active compound can destroy the fat and remove it from the meat so that the fat content contained in the meat decreases even without the process heating. In the treatment of 5 broiler chicken meat is boiled with water and added 10 grams of garlic for 30 minutes experience decrease in fat content is very meaningful to obtain average fat content as much as 3.57%. This significant decrease in fat content is caused by boiling and active allicin and alliin compounds found in garlic, when boiling the fat content in broiler meat will decrease significantly, with garlic addition decrease fat content in broiler meat will become more meaningful. Warming up the boiling process will indeed reduce the potential of active compounds in garlic but this is not very meaningful. Some active compounds in garlic will indeed be damaged by heat during the boiling process, but garlic can still be a good fat- lowering agent. The boiling process will also reduce the stinging odor of dialildisulfide compounds contained in the garlic. The process of fat content analysis used by researchers is the direct extraction of soxhlet, this method has advantages such as shorter time spent, and does not use dangerous reagents such as strong acids. However, this method has a disadvantage that the fat content present in the sample is not all extracted. Researchers use this method with consideration of shorten the time and measured fat content with soxhlet ekxtraksi method direct way can already represent in observing the decrease of fat content in broiler chicken by giving different treatment. In the process of extracting the smoothed

samples, the sampling aims to expand the area of the sample in contact with the solvent or solvent, so that the amount of fat extracted can be greater [6]. In addition, the sampling aims to enable the active compounds in garlic to seep evenly. Researchers refine the sample of broiler chicken meat in a finely chopped way, in the application in everyday life the process of cooking broiler chicken is not always done the process of chopping to keep the look of broiler chicken itself. So the process of broiler chickens in this study does not always have to be applied in the cooking application in everyday life, but the possibility that can happen is that the fat content in broiler chicken has slightly decreased despite boiling and adding process of garlic. 4. Conclusion Based on the results of research the most effective treatment of the decrease in fat content in broiler chicken is five treatments that is boiling for 30 minutes with the addition of 10 grams of garlic. References [1] Narantaka, Anggit. 2012. Broiler Chicken Commercial.Yogyakarta: Java Litera [2] E.J. Christopher. 2011. 28 Days Chicken Harvest Broiler. Jakarta: Agromedia Pustaka [3] Agoes, Azwar. 2010. Indonesian Medicinal Plants. Jakarta: Salemba MedikaKeraten, S.2008. Oil and Food Fat. Jakarta: University of Indonesia [4] Roser, David. 2002.Global for Health. Jakarta: PT Bumi Aksara [5] Rahmawati, Reni.2012. Garlic Single (Onion Lanang) to Treat Various Diseases. Yogyakarta: New Library Press [6] Keraten, S.2008. Oil and Food Fat. Jakarta: University of Indonesia International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2016): 79.57 | Impact Factor (2015): 6.391 International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2016): 79.57 | Impact Factor (2015): 6.391 International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Index Copernicus Value (2016): 79.57 | Impact Factor (2015): 6.391 Paper ID: ART20179762 Volume 7 Issue 1, January 2018 www.ijsr.net Licensed Under Creative Commons Attribution CC BY DOI: 10.21275/ ART20179762 1649 Paper ID: ART20179762 Volume 7 Issue 1, January 2018 www.ijsr.net Licensed Under Creative Commons Attribution CC BY DOI: 10.21275/ ART20179762 1650 Paper ID: ART20179762 Volume 7 Issue 1, January 2018 www.ijsr.net Licensed Under Creative Commons Attribution CC BY DOI: 10.21275/ART20179762 1651