

Pilaiporn Duemchok 2012: The Utilization of Sorghum Flour as Wheat Flour Substitution in Alkaline Noodles. Master of Science (Food Science), Major Field: Food Science, Department of Food Science and Technology. Thesis Advisor: Assistant Professor Masubon Thongngam, Ph.D. 141 pages.

This study involved the utilization of Hegari sorghum flour substitution to wheat flour in yellow alkaline noodle production. Alkaline noodles made by mixing sorghum flour (SF) and pregelatinized sorghum flour (PSF), which was prepared by drum dryer at various SF: PSF ratios as followed; 70:30, 50:50 and 30:70. After cooking, sorghum noodles had dark reddish color, with lower water uptake and higher cooking loss as compared to wheat noodles. When determined the textural properties, the results show that the noodles made from SF: PSF (50:50) and SF: PSF (30:70) had stress and strain value lower than wheat noodles. When the cooking was used steaming instead of boiling water, the sorghum noodle qualities were improved. The steamed sorghum noodles had water uptake similar to the steamed wheat noodles and the optimum steaming time was 15 min. The steamed sorghum noodles had good appearance and water uptake (47.72-59.44) similar to wheat noodles (45.50). Furthermore the steamed noodles, SF: PSF (30:70) had strain value (0.73) insignificantly different from wheat noodles (0.69). Upon addition of cysteine, the results show that the strain values of sorghum noodles with the 0.04 g cysteine /100 g flour was increased when compared with sorghum noodles without cysteine. Sorghum noodles containing 10% egg white powder had higher water uptake and lower cooking loss than sorghum noodles without egg white powder. Nonetheless sorghum noodles with the addition of egg white powder had stress values insignificantly different from wheat noodles. After frozen by fast freezing, the stress and strain values of sorghum noodles were decreased. However the sorghum noodles with egg white powder had better textural properties than the sorghum noodle without egg white powder.

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