

ported in each group was 4 with the exception of hempseed in which three experiments were reported and poppy-seed in which 7 experiments were reported. The subjects reported no laxative effect in any of the experiments with the exception of slight disturbances with the capuassu fat which was similar to the disturbances caused by cocoa butter. The general conclusions are that these fats should prove valuable for food purposes and that cohune, hempseed, poppy-seed and palm-kernel oils are very completely assimilated by the body.

Experiments on the digestibility of entire wheat flour ground by various processes: C. F. LANGWORTHY AND H. J. DEUEL. (By title.) It seemed advisable to determine what effect different methods of milling had on the digestibility of entire wheat flour so experiments were carried out with entire wheat flour ground in five different commercial processes. The different methods of milling used were: (1) A commercial roller mill, (2) roller mill of the Bureau of Chemistry, (3) burr stone mill, (4) steel burr mill, and (5) attrition mill. The experiments were conducted in the same manner as previous experiments of such a nature have been carried on by this office. The flour was incorporated in a ginger bread and fed with a basal ration of oranges, butter and sugar, and tea or coffee was used according to the individual preference. The general results from these experiments seemed to indicate that the finer the wheat is ground, the more completely the protein is absorbed while the percentage of carbohydrate absorbed remains nearly constant. Even in the most finely-ground flour, the protein was only 79 per cent. absorbed while in the case of highly-milled flour (*i. e.*, flour in which the bran has been removed), it has been found that it is about 88 per cent. digested. In the case of the flour milled on the stone burr and steel burr mills the digestibility of the carbohydrate was found to be 97 per cent. and 95.5 per cent. digested, respectively. The protein in each case was 79 per cent. digested. The digestibility of the flour milled on the attrition mill was 95.5 per cent. for the carbohydrate and 74.5 per cent. for the protein. With the commercial sample of roller-milled flour, 94 per cent. of the carbohydrate was digested and 70 per cent. of the protein, and with the sample prepared in the laboratory roller mill, the carbohydrate was 95 per cent. digested and the protein 71 per cent. Both the samples ground on a roller mill were considerably coarser than those ground on any of the

other three mills. It is expected that a bulletin will appear shortly giving a summary of these experiments.

Adsorption of fat by fried batter and doughs and causes of their variations: MINNA C. DENTON AND EDITH WENGEL. (By title.) The various ingredients of the dough exert varying effects upon fat absorption. The gluten of wheatflour, when acted on by hot fat of suitable temperature, tends to form a crust which prevents or hinders fat penetration; so the stiffer dough absorbs less fat, other things being equal. Sugar increases fat absorption very decidedly. Fat present as an ingredient of the dough, greatly increases the fat absorption. Egg, if not above 60 per cent. of the weight of the liquid (as is the case in doughnut recipes) does not lessen the fat absorption, but contrary to current opinion seems even to increase it somewhat. Many details of manipulation exert the most profound effects upon fat absorption. Length of time of frying and relative amount of surface exposed, are two of the most important. Crust formation is of the greatest importance. Any manipulation increasing volume (and consequently surface) increases fat absorption. Turning the cakes repeatedly as they fry increases fat absorption, because it promotes the exposure of a soft crust, to the hot fat. The influence of temperature upon fat-absorption (constant time, temperature 150° C. and 200° C.) is variable and depends entirely upon the consistency and ingredients of the dough. In practical cookery, however the time would be reduced at the higher temperature and this would lessen fat absorption. Temperature is important also because of its influence upon crust formation and upon expansion of the dough.

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