THE OCCURRENCE OF LEAF LARD SHOWING HIGH IODINE ABSORPTION.

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THE Secretary of Agriculture has recently defined and set standards for lard, in accordance with an act approved June 3, 1902, in these terms:

"*d.* Lard.

"Definitions.

"1. Lard is the rendered fresh fat from slaughtered, healthy hogs.

"2. Leaf lard is the lard rendered at moderately high temperatures from the internal fat of the abdomen of the hog, excluding that adherent to the intestines.

"Standard.

"Standard lard and standard leaf lard are lard and leaf lard respectively, free from rancidity, containing not more than one (1) per cent. of substances, other than fatty acids, not fat, necessarily incorporated therewith in the process of rendering, and standard leaf lard has an iodine number not greater than sixty (60).

"Definition.

"3. Neutral lard is lard rendered at low temperatures."[1]

In this quotation, "Standard" means standard of purity. It is, however, not implied that if a given sample of leaf lard should show an iodine absorption in excess of 60, it must, of necessity, be impure. Such a construction is indeed foreseen and expressly denied by the committee of the Association of Official Agricultural Chemists having the matter in charge; but even so, it would seem of interest to note and to place on record the fact that, frequently, samples of leaf lard may be obtained from individual hogs and from droves that show an iodine absorption of 80 and in a few cases as high as 85. The animals from which such samples may be derived are known to stockmen as mast-fed hogs and to packing house men as oily hogs. They are lean, long-snouted, fast-running animals, rather savage in disposition. Little food is given them, but they are allowed to roam the woods at

[1] U. S. Dept. Agriculture, office of the Secretary, circular No. 10.

random and by rooting, to obtain what livelihood they may. In the cooler, their carcasses may be easily identified, owing to the fact that even at the freezing-point, their fat does not harden, while if the leaf or back fat of such an animal be placed in room temperature, the oil runs freely from the tissue.

Below are given three of the constants on the leaf lard from four of the hogs I am considering. These were received at the St. Louis market in November, 1902.

LEAF FROM OILY HOGS.

	Weight fat Lbs.	Melting-point. °C.	Titer. °C.	Iodine No. (Hübl.)
Hog No. 1.....	4.5	37.5	30.8	78.8
" " 2.....	6.0	34.0	28.3	79.0
" " 3.....	5.0	32.0	30.2	79.0
" " 4.....	4.5	....	27.9	82.0

Corresponding figures on the back fat of the same hogs follow. It is, of course, understood that the external fat of an animal is invariably softer than the internal.

BACK FAT FROM OILY HOGS.

	Weight fat. Lbs.	Melting-point. °C.	Titer. °C.	Iodine No (Hübl.)
Hog No. 1.....	10	30.0	26.9	81.7
" " 2.....	10	....	24.7	84.4
" " 3.....	10	....	27.3	81.5
" " 4.....	10	....	24.7	84.7

Lewkowitsch, in his "Oils, Fats and Waxes," quoting Amthor and Zink, gives the iodine number of the fat from the wild boar as 76.6. This is not far below that of mast-fed hogs, and indeed the habits and food in the cases of the wild boar and of the hog allowed to run at liberty in the woods are fairly similar. The long-snouted, lean, fast-running animal of the southwest is not unlike its wild ancestors.

The leaf from the average hog shipped to packing centers hardens quickly in the cooler and becomes quite firm. Such an animal has been fed for some time previous to shipment almost exclusively on corn. It has, in all probability, been rather closely confined in a pen. Its habits have been sedentery. To what extent the diet and to what extent the inactive habits have been instrumental in producing a fat which contains so much less oleïn than that of the hog which is allowed to run the woods and root

is not altogether easy to decide. Possibly both have had their effect. However, stockmen consider the diet to be the chief cause of the difference.

The following figures show three of the constants of the leaf fat from an individual corn-fed hog:

Titer	41.4
Koettstorfer Number	200.3
Iodine Number	57.2

And below are shown the melting-point, titer and iodine value of several samples of leaf lard, each one of which represents an average of from 20,000 to 30,000 hogs received in the Chicago market:

LEAF LARD, NOVEMBER, 1902.

	Titer. °C.	Melting-point. °C.	Iodine No.
	40.9	45.9	53.0
	40.9	45.9	51.5
	40.6	43.8	51.5
	41.3	46.2	55.7
	41.4	45.2	55.8
	41.1	44.6	55.3
	40.9	43.5	54.4
	40.5	44.4	55.0
	40.4	44.0	56.0
Average..	40.9	44.8	54.2

A perusal of these figures will indicate that the limit of 60 is ample, indeed somewhat excessive, for the iodine number of leaf fat from the kind of hog most frequently marketed. The fact remains, however, that we may have samples of leaf lard ranging in iodine value all the way from 50 to 85, and all genuine. That the majority of hogs shipped to our various stock-yards will yield a comparatively hard fat indicates simply that such a hog is more easily marketable (more in demand) than the other kind. If the mast-fed hog brought the best price in the market, this is the hog which would be most largely produced. For practical purposes then, and in general, we may say that pure leaf lard, produced under normal American packing house conditions, shows an iodine value below 60. But we may not conclude that if a sample shows an iodine value of 80, it is impure.

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