EVERYTHING YOU NEED TO KNOW ABOUT FOIE GRAS

Objective: In the following 8 chapters, we intend to provide answers to your questions concerning Foie Gras and its related products: magret and confit.

The first six chapters address breeding and animal concerns, and the following two chapters address nutrition and the French Fattened Waterfowl Industry, represented by CIFOG (French Interprofessional Committee for Fattened Waterfowl).

IN THIS DOCUMENT

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I - FOIE GRAS FROM MORE THAN 4,000 YEARS AGO

HISTORY OF A CENTURIES-OLD PRACTICE

Many eras ago, when hunting and gathering gave way to a more sedentary way of life, Man endeavored in the domestication and the rearing of stock animals.

From the farthest recesses of history we have waterfowl: geese, ducks and swans, raised in diverse lands. Ancient writers and artists, painters and especially sculptors have all paid tribute (in their works) to this man-animal relationship.

The rise of the breeding and fattening of waterfowl has always oscillated between culinary art and basic need. The fat produced by the ducks and geese was crucial to rural people's subsistence throughout the year. Because of its easy preservation, this fat was important in preparing for future times of famine.

Thousands of years of this delicacy

A delicacy as appreciated as Foie Gras, having gained nearly mythical status, has naturally spawned legends. What we do know is that the ancient world created breeding farms for waterfowl where fattening was practiced more than 6,000 years ago. What we now need to find out is how this famed dish made from goose liver was discovered…

Thank You Waterfowl!

In reproducing the waterfowls' natural tendency to overeat in order to brave the winter and make their long migratory flights, an ancient people discovered Foie Gras.
Indeed, migratory birds, in particular, spontaneously overfeed to be able to stock fat in their liver. This fat serves as fuel for their travels. It was in observing this practice, and discovering the delicious result, that the tradition of consuming fattened liver was born, thousands of years ago.*

Between legend and reality: Our gourmet ancestors

According to the famous encyclopedist and historian, Roger Caratini, the "discovery" of the culinary virtues of Foie Gras was tied to the practice of divining, which was widely used in a number of ancient civilizations. The divinatory technique consisted of "reading" the entrails of animals that been sacrificed to the gods. Once that had been done, there would follow a practical, gastronomical even, rite, in which the noblest parts of the sacrificed animals were enjoyed. Foie Gras was clearly one of the most sought-after delicacies.

Our long ago ancestors, once having tasted the delicious fattened liver of wild geese, sought to know more about these birds who would spend winters in Sumer, between the Tigris and

*Note: In all ancient societies, consuming liver held highly symbolic values.

Euphrates rivers (one can still see murals depicting geese at Nineveh in Mesopotamia), or near the Nile delta. Being both food-lovers and curious to know the secrets of this imposing and delicious liver, the Egyptians (among others) decided to study the behavior of the migratory bird. Their patience paid off as they discovered that the geese would stuff themselves with much more food than usual, in order to have enough energy for their long migration. Some of the birds' weight would increase up to 50 percent.

The Egyptians therefore come to understand that geese create "foie gras" by stocking fat in their liver, thus fueling themselves for their long voyage.

So this is how the mysteries of Foie Gras have come to be known! Our Mediterranean ancestors knew that even thousands of years later, food-lovers the world over would continue to appreciate this delicacy and that Foie Gras would be an important part of France's cultural and gastronomical legacy!

Evidence of the first stock farms: rock drawings

Inevitably, waterfowl were domesticated by and by, as people desired to have access to this delicacy at all times. In Giza, archeologists have discovered numerous bas-reliefs depicting the practice of rearing and fattening waterfowl in Egypt (ancient empire 2845-2400 BC). In Saqqarah, near today's Cairo, viziers' tombs show a day's activity in a waterfowl farm, complete with a perfectly adapted method of fattening.

Later, it was most likely the Greeks who brought Foie Gras to the Romans.

Then further along, the Hebrews perpetuated their former Egyptian masters' tradition of raising and fattening. From Palestine, after crossing the Red Sea, they dispersed in Europe, principally in Hungary, Bulgaria, Poland and France.

As of the Ancient Empire (Egypt 2815-2400 BC): "You will find at the Louvre a perfect reproduction of this cartoon: before the eyes of the deceased and his son, a farm of geese and ducks (chicken didn't yet appear in the farms). One image shows how to fatten these geese and ducks…and even storks: seated on the ground, two servants prepare a paste in a bowl with a convex bottom, set upon a tripod. One of the boys holds a funnel (…). His companion rolls the paste between his hands and makes uniform little pellets. Let's go to another image: the pellets are placed in a dish and one only has to take them one by one to send them down the eager bird's beak. With a stroking motion with the fingers around the bird's neck, one helps the bird to swallow. Next to the fatteners, there are receptacles containing a liquid, perhaps oil to help the food slide down more easily? Further away, a crowd of geese and ducks seem to wait impatiently for their turn. Some are already stretching their necks. Others beat their wings. And others drink, visibly sated."

From The Natural and Moral History of Food, by Maguelonne Toussaint-Samat, Bordas 1987.

"FOIE" COMES FROM "FIG"

In Latin, the fattened liver is *Jecur Ficatum*, meaning liver obtained with figs. Curiously, later Latinate peoples, who greatly appreciated Foie Gras, dropped the *Jecur* and kept only *Ficatum* to refer to liver. This then gave way to *Figido* in the 7th century, then *Fedie, Feie* in the 8th, and finally, *Foie.* Spreading throughout the Mediterranean basin, the word became *Higado* in Spanish and *Fegato* in Italian.

> *In other words, figs were used in the fattening of the geese, and represent the origins of the anatomical term, "Foie."*

The consumption of fattened animals and foie gras in particular has been constant for thousands of years. Yet, Foie Gras wavers between two identities: local dish and royal delicacy.

CORN, ALSACE AND THE SOUTHWEST

In the 17th and 18th centuries, the demographic development of the French countryside led the French Southwest, among other regions, to begin farming new crops, such as corn and potatoes, which had the added advantage of not being taxed. This made the breeding of waterfowl economically significant, as numerous agricultural and domestic rural economy books will show.

For centuries, products originating from fattened waterfowl have made up the base of rural peoples' diets in the East (Alsace) and the Southwest. The fat, meat and foie gras were preserved in ceramic jars as provisions for the winter.

Breeding and fattening were soon helped along by the invention of the piston funnel.

Foie Gras started becoming available at rural markets, providing a source of income for the peasants. It is during this period that a renewed interest, linked to Foie Gras, begins in the culinary arts. Strasbourg and Toulouse prove rivals in claiming the Capital of Foie Gras.

In the nineteenth century; the great Foie Gras houses are created. Numerous cities in the Southwest become known for their "fat markets," some of which still exist today: Samatan, Brive, Pomarez, Gimont, Périgueux, Sarlat, etc. They are all of great renown.

The Southwest and Alsace are known the world over for the grand tradition and quality of their Foie Gras.

Throughout France, geese have been raised abundantly (Poitou, Vendee, Normandy, Picardy, etc.). Some of these regions have quite naturally adopted, with rigor and success, traditional methods of making Foie Gras.

Today, many eastern European countries have fattening farms, as does Israel, with the return of the Jewish people after World War II. It was in Israel, in fact, that the first feeders were created. And since the 1980's, the USA and Canada also have fattening farms.

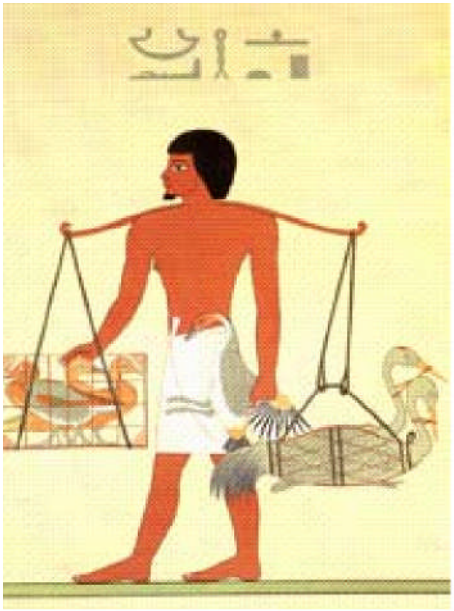
As of 23 BC, Pliny the Elder endeavored to identify the inventor of foie gras, such a delicious recipe! This Latin naturalist then produced two names: Scipion Metellus and Marcus Seius, men who had distinguished themselves the preceding century in the art of fattening geese.

Petronius, in his "Satiricon," the Latin poet Martial, Juvenal in his satires, Apicius in "Culinary Art"---all of these 1st century, BC Latin authors marveled at the excellence of Foie Gras. Apicius even created a very precise, highly detailed recipe for the preparation of Foie Gras, that he shares in his book, "de Re Coquinaria."

Other writers, such as Cato, Varron, Celse and Palladio, even went as far as to make recommendations on the fattening process.

The geographer Strabon makes a reference to the guardian fatteners of geese of Aquile who he names "men-geese," the "Anserarii."

Source: The Grand History of Foie Gras, Serventi, Silvano, Flammarion 1993; The Goose, (original title: L'Oca), Konemann, 1998.



II. WHAT IS FOIE GRAS?

SOLELY AND ALWAYS PRODUCED FROM HEALTHY AND ROBUST WATERFOWL

Foie Gras is the healthy liver from an adult waterfowl (goose or duck) who is robust and in perfect health.

Foie Gras livers are not sick livers as shown by Professor Labié and other scientists who conducted **studies on the reversibility of the fattening of a waterfowl liver.**

It is in favoring the natural tendency of certain animals, waterfowl in particular, to overeat in order to withstand the winter and migration that, as we have seen in the preceding chapter, ancient peoples discovered Foie Gras.

Indeed, waterfowl are heavy eaters. At certain periods, they even become bulimic. One can observe them spending long hours asleep, then wading, then frequently going to eat in repetitive cycles.

For example, Muscovy ducks, parents of the famous moulard ducks,* prove highly voracious and omnivorous in the wild.

These animals are of a placid nature, enjoying tranquility, shade and quiet. They may remain still for hours.**

Like certain birds, their beak, gullet and esophagus dilate to readily swallow fish, birds, bats…that they snatch up with a swift and efficient snap of the neck.

Foie Gras can only be made from a goose or a duck in excellent health, who, once an adult (around three months), and after a period of voluntary, limitless and abundant feeding, receives gradually increasing rations of cooked corn, seasoned with salt and fat, twice daily for about two weeks.

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*These are the same moulard ducks, hybrid between the Muscovy and common varieties that can be seen promenading in the movie "Happiness is in the Prairie." Only the male duck can be used to make Foie Gras.

**Konrad Lorenz

The act of fattening does not unnerve the animal who gradually becomes accustomed to receiving food that gives it a sense of satiety.[1]

If a fattened goose or duck were to be removed from the fattening process, its liver, fat but healthy, returns to its normal weight in a few days, just as it does in the wild when these birds have depleted their resources after a long migration.[2]

After the fattening process, the livers attain the required weight needed for commercialization.

The weight of goose and duck Foie Gras is set by the European Union. Goose Foie Gras must weigh at least 400 grams and duck Foie Gras 300 grams.

Presently, duck Foie Gras is the more consumed of the two, as its more robust taste is a crowd-pleaser, and represents more than 90% of France's Foie Gras production. Goose Foie Gras, remains, however, of unequaled delicacy whose connoisseurs refuse any other kind.

A beautiful Foie Gras is smooth, supple, and firm to the touch, of pleasant color that varies according to the pigment of the corn consumed by the duck or goose.

In summary, let us stress the fact that Foie Gras is the healthy organ of an adult palmiped, robust and in excellent health, free-range raised, and who, after a period of about 12 days (for the duck), will have received under good conditions 24 progressively dosed meals (twice every 24 hours), each meal taking but a few seconds thanks to modern feeding equipment that facilitates the breeders' work and does not unnerve the animal.

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1. INRA study, 1995
2. Study on reversibility, Professors P. Bénard, T. Bengone, G. Bénard, D. Prehn, J. Tanguy, R. Babilé, F. Grimm: ENSA, Env., Toulouse 1994.

III - MAGRET, CONFIT, FOIE GRAS =TOURISM AND JOBS

Foie Gras and its family of products, magret and confit, provides income for more than 30,000 families in France alone. For certain regions, this activity has reduced rural exodus.

It is noteworthy that many of these families contribute significantly, in the spirit of local tradition, to green and gastronomical tourism.

Most of the farms or small companies are artisanal and family-operated. They have strict European hygiene regulations that must be respected. Those who export to the US have been USDA approved. Foie Gras from Alsace or the Southwest is based on traditional and ancestral methods. Its production relies largely on the tradition of confit as a food preservation technique.

Foie Gras production and its corollaries: **receiving visitors on the farms, Fat Markets, regional gastronomical specialties, wine tasting, green tourism**, these activities work together in preserving authenticity.

Younger people have moved to the Southwest in order to pursue this tradition. They attempt to give visitors the spirit of "Happiness is in the Prairie."[1]

Whatever the size of their farms, all have invested. Foreign and French visitors come by the hundreds to spend their vacations in these formerly ignored regions. Many, from all over Europe, even come to stay.

Thanks to the naturalist Buffon, in the Age of Enlightenment, the term Foie Gras was definitively attributed to fattened goose or duck livers, excluding all other birds from this appellation.

1.Title of a poem by Paul Fort, of a book by Pierre Bonte, and also a lovely film by Etienne Chatillez.

INDUSTRY FIGURES: 30,000 FAMILIES, NEARLY 100,000 JOBS

In 2003, French Foie Gras production reached about 16,400 metric tons.

Magret and Confit can only come from fattened waterfowl,* representing 21,000 tons for magret production and 13,000 tons for confit, and plus the legs, gizzards and filets adding up to nearly 38,000 tons.

France is the world's top producer of Foie Gras.

In France, as we have seen above, families, usually in rural areas, live directly from the production of Foie Gras, Magret and Confit, all from fattened waterfowl.

From breeding to retailing of the products, this activity provides 100,000 jobs.

*Whose criteria have been set by the European Union in 1993.

IV - INDUSTRY CHARTER OF ETHICS

ANIMAL WELFARE

A CENTRAL CONCERN OF BREEDERS

CIFOG*, deeply concerned with the well-being of the animals, has decreed, **in the form of an Industry Charter, rules based on the experience that governs this specific breeding practice**. It is important to know that the breeder's livelihood depends directly on the health and well-being of his animals, a concern that facilitates the understanding of the principles guiding the 22 articles of this Charter which has been signed by families/professionals, members of CIFOG.

CIFOG claims civil responsibility
in the advent of a member's
breach of the Charter's rules and regulations.

This Charter, in accord with and complement to European Union regulations, is the end-result of CIFOG's efforts in preserving tradition. For example:

- The limiting of the appellation of duck "Foie Gras" to fattened male ducks only, in keeping with tradition but also to improve quality (1995).
- The setting of 1,000 authorized spaces per year for the creation of new fattening facilities (1995) and 36,000 ducks per farm per year.

This Charter represents the will of seven professional families to respect the ethics of their ancestral profession, which remains linked to the perfect production of an exceptional delicacy, typically French, enjoyed at special occasions: *Foie Gras*.
It is with the concern of preserving tradition, respect for the animals, and bringing quality products to consumers, that the regulations are strictly observed, leading to the results of noble specificity as defined by the Appellation.

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* French Interprofessional Committee for Fattened Waterfowl

IN DETAIL, THE FIFTEEN CHARTER ARTICLES DEDICATED SOLELY TO THE SPECIFIC BREEDING OF FATTENED WATERFOWL (PART I)

Article I – Waterfowl of the French tradition
In order to mesh with traditional local French traditions, waterfowl destined for Foie Gras are: geese (Anser anser), Muscovy Ducks (Cairina moschata) or moulard ducks, a hybrid resulting from an inter-cross between a Muscovy drake and female common duck (Anas platyrhynchos).

Article II – Regulating the number of breeding animals
As experience has shown, it is crucial to seek balance between respect for the environment and each site's regulatory capacity, in the interest of harmonious development for the animals.

Article III – Supply from approved hatcheries
Ducklings and goslings must issue from approved hatcheries that have passed inspection by Health authorities. The young birds are housed in standardized buildings all organized according to strict veterinary procedures.

Article IV – Comfortable individual living space
The young birds receive daily care, and are subject to sanitary and prophylactic monitoring. They live in the comfort of large spaces that are rigorously maintained, receiving ample ventilation, measured humidity levels, light, warmth and quiet. Food and water are abundantly supplied.

Article V – Access to the outdoors
At all stages of their growth, the animals' well-being is strictly monitored. As soon as their protective feathers have grown in, the birds are allowed outside, in a well-kept and spacious area. They are protected from predators and have shelters in case of inclement weather.

Article VI – Scrupulous veterinary care
Adhering to the law constitutes a pledge of good health for the animals and quality products for the consumer.
All Foie Gras waterfowl breeders must obey regulations concerning veterinary care. Only authorized substances are used.

Article VII – A healthy and natural diet
The animals' diet consists of grain and (protein) that may be products from the same farm. If the feed comes from an outside source, the breeder is obligated to know its exact composition.

Article VIII – Healthy and robust animals
Healthy and robust adults, at around the age of 3 months, are selected for the necessary fattening for high-quality Foie Gras. They are progressively prepared for this stage as of 9 weeks of age.

Article IX – Limiting the number of qualified breeders
The Decree 95-625 of May 6, 1995 sets a limit of 1,000 birds per breeder. Beyond this number, the breeder must obtain a permit from Public Authorities. For proper maintenance, CIFOG recommends that each breeder restrict himself to a manageable number of animals.

Article X – Fattening: progressive feeding
This practice comes from an ancient observation of how animals prepare for migration.
With respect to the animals' physiology, experience and tradition tell us that, during the fattening period, it is absolutely necessary to increase food quantity only very progressively.

Article XI – Premium quality corn for the best Foie Gras
In order to obtain an ideal Foie Gras in about two weeks, depending on the species, corn is given. The coloring of the Foie Gras will vary according to the pigmentation of the corn used. In strict adherence to regulations, absolutely no medical substances may be administered during this period.

Article XII - Careful and attentive monitoring
In immaculate, well-lit and well-aerated locales, the fattening begins. The breeder undertakes the feeding with dexterity and care, 2 or 3 meals per 24 hours (according to the species), and must ensure that each animal is living in sound conditions.

Article XIII – Transporting living animals
All stages of the moving of the animals must be undertaken peacefully by those in charge. In transport, the animals must be in well-ventilated vehicles that have barriers to keep the animals from crowding.

Article XIV – Traceability: Identification, provenance and facility tranfer
At the time of transport, each group of animals must bear document identifying their provenance, the number of animals, date of arrival in farm, batch number, etc.
Upon arrival, the animals are gathered in a clean, properly ventilated area.

Article XV – Strict regulations pertaining to slaughterhouses
Slaughter is conducted either in abattoirs or at farms having received EU approval. Electronarcotic anesthesia before slaughter is mandatory. The anesthesia must be administered from a strictly maintained machine approved by the Technical Approvals Committee for Slaughter Equipment.

Articles XVI to XXII concern the consumer, and are developed further in the 2nd part of this press release, in Chapter VII, page 32.

Article XXIII – Legal responsibility of CIFOG
CIFOG assumes civil responsibility in the event of a partner's or association member's breach of rules and recommendations stated in this Charter.

V – HOW TO ACHIEVE GOOD FOIE GRAS?

GEESE AND DUCKS, RAISED ON FRENCH GRAINS

As we have seen above, overeating is a natural propensity of the waterfowl, observed then duly replicated by man for more than 4,000 years.

Today, fattening, the term applied to the act of feeding geese and ducks in order to fatten them, is not a long part of breeding. **It lasts for about two weeks for ducks (90% of production)**, and around three weeks for geese.

Fattening is a feeding technique employed with savoir-faire and dexterity by professionals who understand animal psychology. **The breeder's primary concern is keeping his birds in excellent condition.**

It is important to know that, before getting to the fattening, the birds will have gone through a long period of adaptation. Indeed, ducklings and goslings are only permitted outdoors onto spacious, grassy land once their protective feathers have grown in.
Around the 9th week, the healthiest of the animals will receive unlimited food, progressively and accordingly, to prepare them for the fattening that will only occur once they reach adulthood.

Once the duck weighs around 4 kg, around the 12th week, and the goose reaches about 6 kg, around the 14th week, fattening begins for two to three weeks, respectively.

For ducks, an average time of 12 days has become the norm, as this corresponds to ideal physiological criteria that permit the keeping of the birds in optimal conditions.

A bit of ancient history on the subject of fattening

Long ago, the Gauls fattened their geese with barley, dried flour and porridge made from dried figs. Galen, a Greek doctor, makes a reference to a delicacy "of animal liver fed with figs," and a little later, during the 4th century, Palladius describes the making of foie gras during roman antiquity in his "Agriculture Treatise": "One rolls into little pellets dried figs that have been mashed and soaked in water, then, after 30 days of fattening, gives these pellets for 20 consecutive days." It appears that even Alaric II, king of the Visigoths, made foie gras a regular part of his diet!

This type of feeding could be adapted to any animal, since, as previously noted, the breeder can not benefit from provoking saturation.

Fattening is done progressively and takes place two times per day (for ducks), at portions of 250 g at the beginning to 450 g per meal, of starch-rich corn, whole or cracked, raw or cooked.

The duck is in good health and placed in proper fattening conditions, in order to avoid caloric loss from open-range exercise. ***It is fed every 12 hours***.

As the duck's digestion takes around 6 to 7 hours, it rests for 4 to 5 hours before its second meal of the day that it anticipates often greedily.

The industry recommends limiting the size of a stock farm to a number of animals compatible with the care one person is capable of administering in a day.

As a distinguished delicacy, Foie Gras can not be produced using intensive methods. Only traditional practices must be employed. This is not to say that modern machinery can't be used, especially if it can contribute to the comfort and well-being of the animals. As an example, fattening rooms, in addition to other machinery, are equipped with temperature-regulating ventilation systems, as the ducks must not be in excessive heat.

Modern feeding procedures for fattened waterfowl facilitate the feeder's task and consequently, positively influence the quality of care given to each animal. The distributor stops in front of the animals; the feeder carefully inserts the feeding tube into the bird's beak and quickly delivers the exact portion needed. The process lasts only about 4 to 6 seconds per animal.

It is important to know that a duck's crop can swell to three times its normal size to swallow a prized prey.
This behavior is seen in the bird kingdom, when hatchlings literally swallow the beak of their parents during feeding times.

Fattening is not painful, for it consists of filling the crop without going as far as the digestive system, which starts at the gizzard and not at the beak. Neither the goose nor the duck is under duress while being fattened. The conclusions of diverse studies* are clear: Fattening does not stress these animals any more than the act of capturing them or herding them to shelter, routine practices on all stock farms, as no bird likes to be held.

If an animal is hurt or sick during fattening, it is removed and cared for, because the fattening process can only take place under proper conditions.

No stock farmer can afford to lose an adult animal, which is why the ducks and geese are carefully protected during their entire rearing. The mortality rate is around 2%, as in other poultry farms.

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*Indeed, corticosterone levels measured during the rearing period before the animals are fattened are notable higher than when they are being caged or when fattening begins in individual cages. The act of fattening therefore does not appear to be more stressful than the capturing of the animals, an indispensable operation of production. Beyond the first day of fattening, corticosterone levels not only do not increase after feeding, but even decrease. The act of fattening therefore proves an unstressful experience for the animals.

In conclusion, (in economic terms), it is essential to state that the breeder's subsistence is directly linked to the vitality of each animal.

Achieving a satisfactory production in both quantity and quality will guarantee the breeder's honest remuneration. The breeder therefore has every reason to ensure that animals in his care remain, during fattening, healthy and vigorous!

WATERFOWL AND CORN CONSUMPTION

Corn is the principal grain that appears on a duck's or a goose's menu, other than that which the animal comes across in its outdoor existence.

Corn is a remarkable, highly nutritious grain that was developed in France mainly by the peasants of the Southwest as of the 16th century.

Little by little, small subsistence plots gave way to huge farms of corn, which in turn created a large, competitive industry. These dynamic entrepreneurs of the Southwest started what would represent about 30% of French corn production.

Today, French corn production is nearly 15 million metric tons.

On the whole, French poultry farms consume thousands of tons of corn annually, about 680,000 tons of which feed ducks and geese.

Geese and ducks raised for the production of foie gras, magret, confit, etc., consume, at different stages of their growth, whole grain corn, cracked corn, cornmeal, etc. that comes either from animal nutrition companies or from the stock farm itself.

Source for figures: AGPM, General Assembly of Corn Producers

ILLUSTRIOUS FANS OF FOIE GRAS

In 1774, Casanova was passing through Ancona and took lodgings in the home of a Jewish merchant, hoping to be offered some Foie Gras. Disappointed in not receiving such gratification , he reprimanded his host, "I warned him that the light meal was delicious, but when one can choose to eat lightly or richly every day, it would be good of him to not forget the goose liver." The next day, Casanova was amply rewarded over a dinner that included wine from Cypress, and the sole company of the charming servant, Lia, beautiful and gourmand, whose "lovely throat" whetted other appetites of the notorious seducer…

Around 1778, Clause, head chef of the Marshal of Contades, discovers Foie Gras pate. This important invention came about one day when the Marshall exclaimed to Clause, "Tomorrow, I'm to receive very important guests, and I do not want to see rabbit with noodles and dull Alsatian dumplings on my table---I want French cuisine." After a sleepless night, Clause came up with the idea of filling a rounded pastry shell with whole Foies Gras, veal stuffing, and finely minced bacon, everything to be cooked together in the pastry. The lard slowly melted as the livers continued to cook. For a first try, it is clearly the work of a master! The guests find this new delicacy delicious, and the Marshall has Clause come out so that he can congratulate him in front of everyone.

The very next day, the Marshal, a courtier, has one of these remarkable pates sent to the king in Versailles. Louis XVI, in appreciation of this delicious recipe, grants land in Picardy to the Marshal and 20 pistols to Clause, the inventor of "Pâté en croûte."

At the end of the 18th century, Frederic II "Le Grand" of Prussia makes a point of personally alerting the Prince of Brunswick, by post, any arrival of the pate from Périgueux, promising not to touch it until the Prince comes.

During the revolution, Nicolas-Francois Doyen invents pate with truffles. Doyen, having lost his position as cook to the President of the parliament of Bordeaux, was travelling throughout France looking for work. He meets Clause in Strasburg, and suggests that he try using truffles, for Doyen an indispensable ingredient from his native Southwest. So, Clause began adding truffles to his famous pate Contades while Doyen opened a shop selling the exact same Foie Gras pate.

Sources: History of French Cooking, Henriette Pariente and Genevieve de Ternant, La Martiniere, 1997. The Grand Story of Foie Gras, Silvano Servanti, Flammarion, 1993.

VI - FOIE GRAS SHOWS NO SIGNS OF PATHOLOGY

SCIENTIFIC STUDIES ON REVERSIBILITY AND STRESS

Foie Gras is a delicacy of traditional origins, made generation after generation by people living in harmony with nature and animals, links in an ecological chain.

Foie Gras does not come from an animal whose liver is sick. Rather, the liver must come from a healthy animal that has lived outdoors, and, at the adult stage, has been given a carefully monitored, abundant and progressive diet. The breeder has no reason to surpass this perfectly calculated and dosed feeding.

These waterfowl in question, from abundant glucide-based feeding, will show an excess in lipids (steatosis*) with no signs of degeneration, for there is no intoxication.

Studies on histological preparations show the progressiveness of cell fattening. After a stage of pre-steatosis, fate reserves are stocked progressively and simultaneously in the different lobes of the liver.

The study of the structure of a healthy hepatic lobule shows a well-centered nucleus, whereas a sick liver's cells are easily recognizable, being quite different.**

Foie Gras is not liver affected by hepatitis or cirrhosis. Rather, it is liver that plays a role of heightened fat storing when there is an imbalance between the excessive production of, and the capacity to eliminate, lipids. This is the process that leads to the development of "Foie" (liver) "Gras" (fatty).

*from Greek steos=fat

**Professor Ch. Labié, School of Veterinary Medicine, Toulouse

Professor Ch. LABIE:

"Foie Gras is a hepatic, reversible,
non-pathological steatosis."*

As there is no pathology, a fattened waterfowl's liver progressively goes back to its original weight if the animal were to be returned to an open habitat, suffering absolutely no modifications of its physiological functions.*

Indeed, if fattening is stopped, the waterfowl will restore internal balance first by using its fat reserves, followed by a period of relative fasting before resuming regular feeding. All of this depends on the length of time of the fattening.

In light of the observations made by various groups of researchers from INRA and the School of Veterinary Medicine of Toulouse, CIFOG, ever concerned with knowing more on the reversibility of Foie Gras and stress, has triggered further studies that we expand upon in the present document and texts, with references to the various contributors.

* Study on Reversibility: Professors P. Bénard, T. Bengone, G. Bénard, D. Prehn, J. Tanguy, R. Babilé, F. Grimm; ENSA, Env. – Toulouse 1994.

Aiming for Objectivity: Foie Gras, Fattening, and Animal Welfare

Excerpt from a publication by D. Guémené 1, G. Guy 2, J-M. Faure 1

Findings on the evolution of production methods and acquis de la recherche

1 INRA (National Institue for Agricultural Research), Tours-Nouzilly Center, Station for Poultry Research, F-37380 Nouzilly.

2 INRA, Experimental Unit on Foie Gras Waterfowl, Artiguères, F-40280, Benquet.

Overview: Fattening is assumed by animal protection associations to be a pathological state of stress and suffering. In response to these claims, members of the Council of Europe have adopted two regulatory texts in 1999, specifically treating this type of production (T-AP 95/20 and 95/5). Although the production of foie gras is not put into question, it is expressly mentioned that fattening can only be practiced in the areas where it occurs today. (…) It is in this context that researchers from many research establishments or French institutes (INRA, ITAVI, ADAESO, ENVT, ENSAT) have undertaken studies with the intention of providing objectivity to the debate. Concurrently, CIFOG, an interprofessional committee consisting of professionals from the industry, has drawn a charter of proper methods and makes continual advances in the genotypes used as well as in their production methods and equipment. (It is clear) that the evolution of the industry's practices is beneficial in terms of animal welfare and that scientific results do not corroborate the body of criticism addressed to this industry. (…)

I – Introduction

(…)Within the last decade, taking into consideration the criticism aimed at the industry, researchers have worked to examine the relevance of this criticism, using various experimental approaches. The main objectives of these studies were to understand the species' adaptation to this production, the reversibility of induced steatosis, spontaneous ingestion capacity, and behavioral and physiological responses (stress and pain). The major findings are successively mentioned below.

II – The Evolution of Production Methods

The questioning by society of modern production systems is justified by a social demand for new attributes in animal production, in particular providing them with healthy, quality organoleptic products issuing from environmentally sound agriculture (Larrere, 2003).

In response to this social demand, professionals, scientists, and legislators are continually improving current methods. Indeed, it is commonly observed that current intensive breeding conditions can only have a negative impact on these diverse attributes and on animal welfare in particular. Although far from being automatically justified, the famous image of Epinal, of the Golden Age of extensive breeding of the past, and his animal-friendly methods, is largely divided within society, including the agriculture industry, where some farmers opt for quality production and others who do not.

The production of foie gras obviously falls into this duality, what with breeders of various geographical origins, producing goose or duck foie gras, using either individual or collective cages, or even ground-level enclosures, fattening with whole corn grain or mash using a feeding machine more or less automated, etc.

(…) With concern about their image and of their industry's future, professionals quickly saw the need, in 1996, to adopt a charter regarding the production of foie gras. This charter consists of 23 articles, treating both breeding/rearing conditions that must be compatible with animal welfare and product quality for the consumer. The 23rd article of this charter stipulates that CIFOG is to claim civil responsibility in the event that any of its members should fail to observe its rules. Aside from this strongly symbolic act, the professionals voluntarily limited the size of their breeding groups (4,000 subjects/ 36,000 ducks per year) and of fattening groups (1,000 subjects), and works to improve breeding conditions. In so doing, in 2002, they created an interprofessional agreement applicable for 3 years outlining minimum requirements in the production of fattened ducks, such as a minimum age of 11 weeks for fattening, access to an outside area during the rearing period, and the requirement of a minimum period of fattening with corn: 10 days or at

least 19 meals. Concurrently, since 2000, breeders belonging to the IGP Foie Gras of the Southwest submit to having their methods of foie gras production inspected by an independent association.

Even more recently, since its General Assembly (board meeting) of June 24, 2004, CIFOG announced that its farmers would forego the use of individual cages, in keeping with (the) recommendation (T-AP 95/20).

The professionals of the industry vow also to use only animals who are the best suited to this type of production. Through genetic selection, the evolution of genotypes reinforces adaptation to fattening. Recent field observations show, however, that the present genotype of moulard ducks is subject to showing reactions of fear. These observations are in line with recent experimental findings that suggest that these ducks are relatively demonstrative and clearly quite sociable (Guémené *et al*., 2004), two behavioural traits studied in quail showing them unfavourable to intensive breeding. Regarding rearing conditions, in particular during fattening, their evolution (as well as that in other poultry farms) has been rapid and spectacular since the 1950s. And so, with the objective of rationalizing and higher efficiency, ducks have progressively been placed in individual cages instead of in collective pens. The main advantage to this type of lodging lies in the facilitating of the various manipulations (identification, repositioning of the animal, capture, insertion of the feeding tube); the animal cannot escape, or get turned around and therefore confused. In terms of well-being, this type of housing contributes to minimizing acute and chronic stress (Guémené *et al*., 1999; Guémené and Guy, 2004) but also restricts the animal's physical expression (spanning its wings, social interaction) during the fattening period. To mitigate the consequences of faulty models that caused some injury (to wings, feet, sternum), cage makers improved upon design and materials.
Concurrently, the manual screw dispenser gave way to the pneumatic dispenser and the hydraulic dispenser whose latest models feature an incorporated mixer, an automatic shift, and automated control of the amount of corn delivered. For their part, breeders set up feeding programs adapted to the preparation for fattening (the pre-fattening) (Guy and Guémené, 2004); programs permitting the animal to adapt to the fattening and to considerably shorten its duration. In about 12 years, the duration has been reduced more than 2.5 days (13.4 vs. 15.9 in 1989). Experimentally, good results showed for ducks (Robin *et al*., 2002) and geese (findings not published) for fattening periods of 10 days. Specific barns set up to raise ducks during the fattening period enable the optimisation of ambient conditions, such as fully-controlled temperature, moisture and air renewal. This evolution has profoundly modified customary method and has allowed more time-efficient fattening, all the while obtaining better zootechnical results (Chinzi and Koehl, 1998) such as minimal mortality and frequency of injury. These changes, among others, contribute to the animal's welfare. Lower production objectives and revised payment schemes explain in part the significant decrease in mortality observed in 2002 (2.7% vs. 4.3 in 2001).

The evolution of rearing conditions is normally a relatively continuous integration process, interrupted by a few abrupt changes occurring usually when major innovations are integrated. In the present case, breeders are confronted with the challenge of legal constraints. Indeed, present lodging conditions will have to be completely re-conceptualized as the use of individual cages will be officially forbidden by the end of 2010, and even by December 31, 2004 for new sites (T-QP 95/20).

This re-conceptualization implies the defining of a new concept of collective cages. Research to find optimal group numbers and density is already underway (Mirabito *et al*., 2002 a,b,c) (…).At the same time, it is indispensable to both animals welfare and the breeder to keep seeking the ideal genotype so that the practice of fattening in collective cages can be carried out in satisfactory conditions. Now is the time to pursue the conception and adaptation of modules that are, technically and economically, compatible with improving animal welfare and the working conditions of the feeders.

III – Research Findings

What are the conclusions in terms of animal welfare?

3-1 Waterfowl "adapted" to foie gras production

Many animal species have the ability to overeat and stock reserves for such energetic demands as incubation, migration or hibernation. Man has applied this physiological adaptation towards his own benefit, in making foie gras from waterfowl. Only certain strains (the grey Landaise goose, muscovy duck) or hybrids (moulard) can be used profitably because the intensity of hepatic steatosis, an

extraphysiological state, varies according to genotype (Hermier et al., 1999). Genotypes used in meat production, such as the Polish goose, develop smaller steatoses (Hermier *et al*., 1996; Fournier *et al*., 1997). It has been shown that it is because of a "defect" in the transporting of lipids by VLDL (very low density lipoprotein) that their transfer to peripheral fat reserve sites is limited (Blum, 1990). Selection has therefore allowed the securing of the genotypes best suited to this use.

3-2 Characteristics of the hepatic steatosis of fattening

In most cases, particularly in mammals, hepatic steatosis is the result of a pathological state and many assume the same to be the case with foie gras. This is why one sees Internet sites claiming, "Fattening ducks and geese is done to induce steatotic, cirrhotic degeneration of the liver" (www.pmaf.org/docs).

It is important to know that the major site of lipogenesis in birds is in the liver, whereas in mammals it is in the adipose tissue. The failure to recognize this physiological particularity in birds frequently engenders misunderstandings, especially among those in the veterinary and medical fields who deal mainly with mammals. Hypertrophy from fattening does not have the same histological characteristics as pathological steatoses (Bénard et al., 1996; 1996; Bénard and Labié, 1998).

The two states of steatosis can be distinguished on many levels. Histological studies show that the hepatic cells of a pathological steatosis are degenerative and destructured whereas hypertrophy from fattening only affects hepatocytes while maintaining cellular integrity. Furthermore, the excess fat that results starts peripherally (periportal zone) then goes to the middle of the lobe whereas in pathological situations, the excess fat is initially central.

A good foie gras does not normally have any macroscopic lesions, necrosis, or hemorrhaging. The connective framework is distended, but the Glisson capsule surrounding the liver stays intact. Foie gras obtained by fattening is therefore in no way a sick organ resulting from deadly hepatonecrosis.

3-3 Hepatic Steatosis from fattening is reversible

In the case of pathological steatosis, the liver cells have degenerative lesions that are generally irreversible. During the period of fattening, the metabolic abilities of the liver are indeed modified, yet the functional integrity of the cells remains intact even after several successive cycles, and cellular hypertrophy is totally reversible (Babilé *et al*., 1996, 1998; Bénard *et al*., 1996, 1998; Bénard *et al*., 1998).

In this way, animals subjected to three successive fattening cycles lasting each 2 weeks, at 4-week intervals, showed characteristics comparable to ducks of the same age that had not gone through the successive cycles of fattening. Overall, the chemical hepatic components, the plasmatic parameters and the liver's weight all go back to levels equivalent to those of unfattened ducks, within about 15 days after the cessation of fattening.

Hepatic steatosis from fattening is therefore a non-pathological process that is entirely reversible, a trait used in former times to select future reproducers.

3-4 Quantification of the intake capacity of waterfowl

Rumors of unrealistic quantities of food given at fattening not only greatly exaggerate what is actually given, but are questionable allegations to begin with. What can one say about the daily intake of a tick that can consume 100 times its body weight in blood, other than that comparing species is useless? The real question then is to know if the quantity of food given is compatible with the waterfowl's intake capacity. When ducks are given unlimited amounts of food, whereas heretofore they had only been fed at mealtimes, their spontaneous consumption can temporarily reach between 600 and 750g (Guy et al., 1998). Maximal daily quantities at the end of fattening can reach 950 to 1000g. Incidentally, it has been observed that geese can consume more than 3kg of carrots per day for several days (findings not published). The male moulard and the goose are able to spontaneously ingest comparable if not higher quantities of food to what is given during fattening.

This ability to overeat is not however sufficient enough to replace fattening. However, if it is optimized, it could reduce the duration of fattening for an unchanged production goal.

3-5 The relationship between breeder-feeder and waterfowl

To test a possible aversion to fattening (Faure *et al*., 1998; Faure *et al.,* 2001), two types of behavioral tests have conducted. The idea is based on the hypothesis that avoidance ought to occur when the animal is confronted with associated stimuli (feeder, fattening) if this stimuli is unpleasant. After a

familiarization period, geese continue to spontaneously go, in the same amount of time, from their rearing pen to their feeding pen to receive their ration by way of fattening. With moulard ducks, the response is less regular because the spontaneous exiting from the rearing pen is not usual (Faure *et al*., 1998; Faure *et al*., 2001). With this species, irrespective of fattening, disturbances such as a change in researchers (who remain, however, hidden), or in timing, have had greater consequences on the ducks' range of movement. Behavioral sensitivity in the moulard duck has therefore been demonstrated. However, their distance from the approaching feeder decreases during the fattening period and is less than if it were a stranger approaching (Faure *et al*., 2001).

Familiarization with humans encourages the human-animal relationship, as it limits the amplitude of physiological responses (corticosteronemia) to stress (Servière *et al*., 2000; Guémené *et al*., 2002) and behavioural reactions to fear (Guémené *et al.*, 2002).

Fattened waterfowl therefore do not develop avoidance behavior vis-à-vis their feeder, and familiarization with humans even has beneficial calming qualities.

3-6 Is the act of fattening perceived as stressful?

The practice of fattening to which geese and ducks are subjected is assumed to be a source of heightened stress, and its repetition 2 or 3 times per day according to species ought to induce chronic stress. Heightened stress induces the activation of the corticosurrenal axis whose corticosteronemia can be measured in birds.

Experimental findings from various independent studies show that, except in rare cases (Mirabito et al., 2002), the act of fattening does not provoke higher levels of corticosteronemia in the male moulard duck when it is place in an individual cage (Faure et al., 1996; Guémené *et al*., 1996, 1998, 1999, 2001). This absence of physiological effect is not due to an inactivation of the corticotrope central axis, for the duck remains sensitive to pharmacological stimulation (injection of ACTH) and to stressful physical acts such as capturing and struggle (Guémené *et al*., 1998, 1999). However, when the ducks are put into collective cages and in collective pens at ground level, an elevated corticosteronemia can often be measured after the first fattening session (Guémené *et al*., 1999; Mirabito et al., 1999). With geese, placing the animals in collective pens also raises corticosteronemia as of the first fattening feeding. Quick assimilation is also observed. These finding s therefore indicate that the act of fattening is not a major source of heightened or chronic stress in male moulards in individual cages. Rearing conditions involving the necessary capture of the animals in order to accomplish fattening, as well as the resulting conflict, appear to be potential sources of heightened and/or chronic stress.

3-7 Is the act of fattening painful?

Animal protection associations consider the act of fattening a source of suffering as stated in this question: "What can we do to stop the suffering?" (www.pmaf.org). However, the notions of pain and suffering involve a psychological component, and by substituting the notion of nociception, we can more objectively approach the practice experimentally. In regard to fattening, the different stimuli imposed upon the animal (repeated insertion of the feeding tube, risk of erosion in the mucous membranes, distension of the esophageal walls and of the pro-ventricle, hepatic steatosis with visceral compression) could induce nociceptive signs starting in the viscera (digestive tract). Experimentally, the application of irritant stimulation on the esophageal walls of ducks that have been anesthetized induces plasmatic extravasation, whereas at the end of the fattening period, this type of condition only appears sporadically and in lesser amplitude (Servière *et al*., 2000, 2002).

A quantitative approach currently underway even suggests a diminution of this extravasation during the fattening period. Extravasation, however, is unmistakable in the event of accidental injury or illness (candidose) (Servière *et al*., 2000, 2002). The activation of specific neuron is important after the application irritating stimulation, and the number of reactive cells is much lower after the act of fattening (Servière *et al.,* 2000, 2002).

In a normal context, when there is no injury or pathology in the ducks, the act of fattening does not seem to generate significant nociceptive information. (…)

IV- Conclusion

Well-being corresponds to the animal's state of harmony in its habitat and depends on the way it perceives various situations. In this context, animal protection associations consider foie gras as issuing from tremendous suffering and that fattening can only do them harm. Based on the extreme application of the phenomenon of natural fattening, foie gras is a healthy organ not issuing from pathological steatosis.

It has been demonstrated that physiological indicators of stress or of nociception and behavioural responses were only moderately, if at all, affected by the fattening procedure. The findings of different behavioural and physiological studies cited in this report do not support the virulent criticism aimed at this practice. In addition, even if more progress could still be made, professionals of the industry continually seek to improve their methods and subject themselves to, among other things, the recommendations of a charter and an interprofessional agreement, a body of rules designed to limit inconsistencies inherent to changing production conditions. Other research programs are also underway in various fields, such as genetic adaptation of animals, reducing the amount of waste to help the environment, optimization of breeding/rearing conditions. Used together, these findings should contribute to improving general foie gras production conditions and help it survive. (…)

Thanks: The whole of the experimental findings presented in this report would not have been possible without the financial contribution of the Ministry of Agriculture's DGAL's* Bureau for the Protection of Animals and the participation of CIFOG, numerous researchers from various organizations (INRA, ITAVI, ADAESO, ENVT, ENSAT, Lycée of Périgueux, etc…), as well as their respective technical personnel.

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VII – FOIE GRAS and NUTRITION

HEALTHY AND UNHEALTHY FATS
WHAT'S IN 100G OF FOIE GRAS?

Nutrition:

Recent study* findings bring to light foie gras's wealth of poly- and mono-unsaturated fats, known for their benefits to coronary health. Foie gras is rich in oleic acid, 25.2g monounsaturated fatty acids and 4.5g polyunsaturated fatty acids, for only 12g of saturated fat (for 100g). Professor Serge Renaud, in the 1970s, is the researcher who discovered the role of mono- and poly-unsaturated fatty acids found in olive oil, colza oil and goose and duck fat, all of which contain important oleic acids that inhibit blood clotting.

The story of a discovery

As of the 1960s, Professor Serge Renaud devoted himself to the study and prevention of coronary illness. In 1978, he discovered the importance of certain unsaturated fatty acids in inhibiting blood clots. While conducting his studies, he also uncovers the famous Cretan diet. His revelation of the Mediterranean diet's remarkable protective qualities is the beginning of what came to be known as the "French paradox." An article on his findings made the French paradox known throughout the world.

In September of 1987, at the CITEF (the International Techniques and Energy of the Future Show), a study** reveals that goose fat contains 10.1% protective polyunsaturated fatty acids.

Its researchers believe that it is better to consume this type of fat, while also showing that vegetal fats are better tolerated by the body.

Professor Pons, president of the Health Observatory of the Midi-Pyrenees (ORSMIP), then announces the findings of a clinical analysis of the consumption of goose and duck fat. These results now figure in international conversion charts.

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*Professor Serge Renaud – INSERM Toulouse and project Monica – *The Health Diet*, Odile Jacob.

**Led by Drs. Douste-Blazy, Cambou and Ruidavets of INSERM 101, Toulouse, as part of the project MONICA launched by WHO (World Health Organization) in 41 centers spread out through 21 countries, with 3 in France (Lille, Strasbourg, Toulouse).

What Professor Serge Renaud has to say about goose and duck fat

In his book The Health Diet (Odile Jacob, publ.), Professor Serge Renaud discusses the role of different fats, including those of poultry, geese and duck. Here are some excerpts from his fascinating work:

Page 28: "…We then look at the fat of poultry, chicken and duck, that is half as loaded in saturated fat as dairy products. That duck fat remains liquid at room temperature is an indication of its low amount of saturated fat and its relatively high level of oleic, linoleic and linolenic acids. Furthermore, the Gers, the Haute-Garonne and surrounding areas where duck fat, foie gras and confit are heavily consumed report among the lowest rate of coronary deaths in France, and the highest life expectance (Renaud, de Lorgeril, 1994)…"

Page 34: "…let us again state that 70% of the position 2 fatty acids in foie gras come from oleic acids, whereas 20% comes from saturated fatty acids. The preferred dish of the Gers provides the body with significant amounts of immediately useable oleic acids, with no deleterious effect on the heart. In their way, (French) Southwestern traditions join with those of Crete and other Mediterranean countries to encourage the consumption of good fats…"

Pages 108/109: "…This is why Project MONICA undertook the comparison of dietary habits in Lille, Strasbourg, and Toulouse. We were then able to identify their role in the exceptional health of the Toulousans, and, in particular, the women of Toulouse who have the highest life expectancy in the world. Compared with the two other cities, in Toulouse one eats more bread, vegetables, fruits, cheese and vegetable oils, more wine yet less butter. Their dietary habits therefore are close to those of any Mediterranean diet. Of course, Olive oil is hardly used; they would rather use goose or duck fat. But the fat from duck or foie gras is rich in oleic acids and therefore closer to olive oil than to other animal fats lie butter or lard. It is in fact difficult to attribute unhealthfulness to these fats, since the areas where they are the most consumed, Gers and Lot, count among the regions where the mortality rate is the lowest…"

WHAT'S IN 100G OF FOIE GRAS?

Nutritional Values for 100g*			
Calories (kcal)	448	Phosphorus (mg)	190
Calories (kj)	1851	Potassium (mg)	170
Water (g)	42	Calcium (mg)	10
Protein (g)	10	Iron (mg)	6.4
Available glucides (g)	3	Retinol (µg)	950
Available glucides (g mono)	3.3	Equ. Beta-carotene (µg)	n.d.
- sugar (g)	n.d.	Vitamin D (µg)	n.d.
- starch (g)	n.d.	Vitamin E (mg)	0.35
Fiber (g)	0	Vitamin C (mg)	2
Lipids (g)	44	Thiamin (mg)	0.03
- E.F.A. saturated (g)	12	Riboflavin (mg)	0.6
- E.F.A. monounsaturated (g)	25.2	Niacin (mg)	n.d.
- E.F.A. polyunsaturated (g)	4.8	Pantothenic acid (mg)	n.d.
Cholesterol (mg)	380	Vitamin B6 (mg)	n.d.
Alcohol (g)	0	Vitamin B12 (µg)	n.d.
Sodium (mg)	740	Folic acid (µg)	566
Magnesium (mg)	15		

* Table by REGAL (1995 version)

Jean Claude Favier
French Institute of Scientific Research for Co-op Business Development (ORSTOM)
Data Bank for Food Quality (CNEVA-CIQUAL)

Jayne Ireland-Ripert
National Center of Veterinary and Alimentary Studies (CNEVA)
Data Bank for Food Quality (CNEVA-CIQUAL)
National Institute for Agronomic Research (INRA)

Carole Toque
National Center of Veterinary and Alimentary Studies (CNEVA)
Data Bank for Food Quality (CNEVA-CIQUAL)

Max Feinberg
National Institute for Agronomical Research (INRA)
National Agronomic Institute (INA-PG)

The need for good fats, especially monounsaturated lipids

Ideally, the contribution of lipids to total energy calories should be around 30% (with 10% saturated fatty acids, 10% monounsaturated fatty acids and 10% polyunsaturated fatty acids).

Fats, or lipids, contain fatty acids, designated saturated or unsaturated according to whether they do or do not have double binding molecules. The calories that these fatty acids contain are transformed into energy, necessary to cell function. Some essential fatty acids are also indispensable to organ formation.

Saturated fatty acids raise the level of cholesterol, in particular LDL, the "bad" cholesterol.

Conversely, unsaturated fatty acids, found in vegetable oils, fish and waterfowl fat (duck and goose) decrease the level of LDL.

There are three types of fatty acids able to binding to the glycerol molecule to form triglycerides, distinct families of lipids found in cholesterol: saturated, monounsaturated, and polyunsaturated.

- Saturated (butter, lard), when taken in too large quantities, raise both LDL and the risk of cardiovascular sickness.

On the contrary, diets rich in mono- and poly- unsaturated fatty acids work preventively.

Among polyunsaturated fatty acids, there are the Omega-6, derivative of linoleic acid, considered an essential fatty acid because the body cannot manufacture this nutrient, and it must come from our diet; also Omega-3, second essential fatty acid, derivative of alphalinolenic acid.

Essential fatty acids play an important role in growth, the immune system, and blood fluidity.

If all lipids are equal in calories (9 kcal/g), they differ in their metabolic consequences. Animal fats, which have saturated fatty acids, need to be reduced significantly, if one wishes to not gain weight.

- ***Monounsaturated fatty acids, especially oleic acid, are found mainly in olive oil, waterfowl fat (geese and duck) and fish!***

Unlike saturated fatty acids, monounsaturated fatty acids have a beneficial impact on lipid management (maintaining or augmenting DHL, the "good" cholesterol). Furthermore, they maximize the benefits of losing weight by enhancing glucide tolerance through an improved sensitivity to and secretion of insulin. Also important is their anti-thrombotic advantages (blood is more fluid and does not form clots).

- Polyunsaturated fatty acids are also beneficial to lipid management. Those belonging to the n-3 family, namely alpha-linolenic acid, induce a decrease in triglyceride levels (VLDL and LDL) and have an anti-atherogenic effect (fat lining in vascular walls).

In conclusion, for cooking, it is better to use goose or duck fat, or olive oil.

The peoples of Landes, Gers, and Perigord commonly use duck or goose fat in their cooking and they have a very low coronary mortality rate: 50% less than French from the north in particular.

Nonetheless, people everywhere can benefit from the beneficial cardioprotective effects of duck and goose fat, rich in monounsaturated essential fatty acids.

The taste is in the fat!
Good fats bring out savoriness.

In the 10th century, under Constantine VI, Emperor of Byzantium, an agronomic treatise called "The Geoponics" explains and improves upon the art of fattening geese and ducks.
At the end of the 12th century, beginning of the 13th, in the "Book of Agriculture" Arab writers unveiled the "secret" of fattening duck livers: pellets made from grilled sesame and garden vegetables.

As of the 14th century, in the West, the difference is made between waterfowl livers and those of other poultry. Michele Savonarola (a Paduan doctor) claims "goose livers to be more tender and tastier than those of other fowl (…), especially if they've been fattened with cooked millet or whole grain millet flour, mixed with milk."
As for recipes, around 1474, the humanist and librarian of the pontifical palace Bartolomeo Sachi, called "Palatine," explains that goose liver is "excellent, especially if it's been soaked in milk or in honey water."

From Nutritional and Dietetic Review, September 1996.

VIII– CIFOG: REFLECTION AND COHESION OF THE INDUSTRY

The national Interprofessional Committee for Waterfowl Foie Gras (CIFOG) has been operational since 1990. The committee was created by industry professionals to protect their products and to enforce regulations in the general interest of the industry.

CIFOG's MISSION

CIFOG represents seven interrelated professional fields involved with Foie Gras Waterfowl:

- National Union of Hatcheries
- National Federation of Associated Waterfowl Producers
- French Confederation of Poultry Farming
- National Federation of Fattened Waterfowl Carvers
- French Federation of Preserved Food Industries
- National Federation of Preserve Co-ops
- Inter-regional Association of Preserve Artisans of the Greater Southwest

Its role is to protect foie gras products and to enforce regulations set forth by industry professionals for the general welfare of the industry. Created as an not for profit organization and uniting the various trades involved in the industry, CIFOG was officially recognized as an interprofessional organization in 1987. In effect since 1990, its principal missions are the following:

- Uniting the workers in the Foie Gras Waterfowl industry in order to establish interprofessional agreements in setting "game rules" relating to standards, techniques, appellations….
- Improving knowledge of the market and sharing this information
- Promoting and protecting Foie Gras and their products
- Participating in the financing of collective research programs essential to the industry (production techniques, animal welfare, information on raw materials, transformation technology…).

If certain projects have been well carried out, it is indeed thanks to the tenacity of those who initiated them. Still, none of it would have been possible without the presence and the cooperation of the committee. Thanks to CIFOG, important advancements have already been made:

- The European recognition of French products: setting of minimal weight, commercialization of raw Foie Gras and the defining of Magret by the European Union in 1993.

- The regularization of finished products with the definition by decree, in 1993, of different types of preparations bearing the appellation "Foie Gras" and, in 1994, official methods of analysis and testing.

- The keeping of tradition with: retaining the appellation "Foie Gras" only for Foie Gras made from fattened male ducks, in keeping with tradition and also to improve quality (1995), the setting of a threshold of 1,000 authorized openings for the creation of Foie Gras fattening farms in 1995, maintaining the option to slaughter at the farm and to sell at open markets, committing to standardization.

- The creation of an information center for members of the industry, the establishment of accurate indicators of market activity, the organizing of reproducers and ducklings, consumer studies, foreign trade, market prices and stocks…

- The promotion of their products by way of publicity campaigns to stimulate end-of-year sales, then for Easter, etc…

REGULATIONS

To protect the industry and its savoir-faire, CIFOG initiated numerous regulations. These rules governing the trade are essential for the image and status of the finished product.

European regulations

In order to set the first communal rule for all countries that furnish raw Foie Gras, it was absolutely necessary to accurately define raw materials.

As of July 1, 1991, any product bearing the name Foie Gras must issue only from geese and moulard or Muscovy ducks fattened intently to obtain a hypertrophy of hepatic cells: 250g for duck and 400 for goose.

In October 1993, the European Union defined Magret: it must come from an animal fattened for the making of Foie Gras.

Agreements on Production Standards

The strong commercial demand created a production alert, beginning the fattening of female moulard ducks.

However, in the beginning of 1995, the market is flooded, and the industry decides to react by reinforcing the quality level of raw materials.

In May 1995, at France's request, the European Union modifies the minimum weight for raw duck Foie Gras from 250g to 300g but refuses to exclude females.

In April 2002, CIFOG adopted an interprofessional agreement defining the production conditions of ducks, extended by the authorities for three years, October 5, 2002.

Production on a human scale

To keep a humane character to the production of Foie Gras, the industry set itself limits for the size of fattening ateliers.

In April 1996, a decree set the limit at 1,000 for the number of fattening spaces per farm. This threshold upholds the quality and care of a breeder's know-how all the while allowing for innovation. This decree was then extended to duck fattening ateliers limiting its capacity to 36,000 per year.

Regulation Accord 2002

In September, 2002, CIFOG adopted a market regulation accord limiting the creation of new ateliers, which imposed a 5% reduction in production, while excluding small producers. This interprofessional accord of market regulating was extended by ministerial decision January 13, 2003.

Ethics of the Industry: The Charter on the Production of Foie Gras

In 1996, Foie Gras professionals are warned of the risks to the trade of bad press by anti-fattening lobbies. They then decide to put into writing the ancestral principles that govern the production of Foie Gras with respect to animals.

A Charter of 23 articles describes the "fundamentals" to follow throughout the production process, such as leaving access to open range during the rearing period, progressive feeding, etc.

This document is a veritable pillar for the industry and announces, in Article 23, that the committee "assumes civil responsibility against any member of the trade breaching the Charter's rules."

MARKET AWARENESS

Trade members need gauges to orient their decisions. Knowing and attempting to predict market activity should therefore be one of CIFOG's missions.

Available statistics

- Trade figures with spot prices made available by the Ministry of Agriculture's "Market News" Department.
- Statistical tools are created to better follow market trends: reproducers' price data, placement of ducklings, manufacturing, inventories and consumer purchase levels.
- Recently, two new surveys have helped improve consumer spending statistics: a restaurant trade survey to monitor the foodservice consumption of Foie Gras and a retail survey to for supermarket trends.

All market data is gathered in an Annual Economic Report for professionals. Furthermore, the recording and processing of these technical and economic elements of the Foie Gras trade make CIFOG a formidable Center for General Information sought out by diverse parties: journalists, companies, consumers…

Image

CIFOG implemented an "image barometer" in 2000. This informs of French behavior vis-à-vis Foie Gras, in terms of consumption, buying, image and to know their attitude concerning the conditions of production.

Internal Newsletter for the Trade

CIFOG regularly publishes its findings in its newsletter ***Foie Gras Info***, and distributes it to its members.

Electronic Information

The latest market news is readily available on-line. To sign up, the professionals simply write to: cifog@wanadoo.fr.

DYNAMIC, SCIENTIFIC STUDIES

The protection of the industry depends on irrefutable arguments. CIFOG therefore provides generous funding for research.

Research for demonstrating Foie Gras's legitimacy has revealed:

- The reversibility of fattening in duck and goose liver, without physiological damage.
- The natural aptitude of certain species for the making of Foie Gras.
- That the stress from fattening is less than stress induces by simple capture and is short-lived, for it disappears after 2 or 3 days of fattening…

Every year, CIFOG defines the areas that will receive research priority.

Here are some of the themes explored:

- Animal welfare and the validation of arguments in favor of this activity.
- The improvement of production techniques (reducing food costs, respect for the environment…).
- The improvement of transformation techniques.