

Breed choices for the 21st Century



High performance with high health genetics

Hermitage Pedigree Pigs Ltd has been dedicated to specifically designing high performance, high health genetics for their customers since 1958.

Operating from their base in Kilkenny, Ireland, they have developed specific lines to suit commercial conditions both at home and worldwide. At Hermitage they operate two distinct breeding programmes producing both sire and dam lines.

The Hermitage 'Maternal Line Programme' focuses on producing female lines. These animals are specifically bred and selected for female line traits such as numbers born alive, feed intake, growth rate, milking ability and weaning to service interval.

In addition, all Hermitage lines

number one sire for producing economically important traits in Ireland and is also proving very popular with Hermitage customers in other international markets, in particular the UK, Spain and Greece.

In addition to Ireland, Hermitage now have international production and marketing bases in the United Kingdom, Spain, Germany, Italy and Greece and Cyprus and in the USA.

Many other markets in Europe and Asia are serviced from the Irish and international production facilities.

Hermitage also implement an impressive research and development programme.

This programme comprises of three main areas:



are intensively selected for overall conformation (feet, legs, teats and general body conformation).

The result is a hyperprolific female line which has all the necessary attributes to ensure the optimum sow productivity and longevity in customers' herds.

The Hermitage 'Terminal Line Programme' focuses on producing the 'Hylean' lines. Hermitage Hylean lines are specifically selected for growth rate, feed conversion, feed intake, lean meat percentage, muscle depth and area, meat quality and overall body conformation.

The resulting genotype has been independently evaluated as the

- Reproductive technologies – including embryo transfer techniques and frozen semen technologies.
- Genotype performance testing and evaluation – including all aspects of physical performance testing and meat quality.
- Molecular biology – including examination of the mitochondrial genome and parental imprinting of major genes in Hermitage lines.

Hermitage are supplying frozen semen to Greece, Cyprus, South America and Asia on a routine basis.

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France Hybrides – satisfying diverse markets

France Hybrides' products have been satisfying diversified markets and the varied pig users from consumers to slaughterhouses, processors and farmers for more than 30 years.

Their goal is to optimise the quantity of meat produced per sow and per year at the best economic cost (high prolificacy, growth rate, conversion index, percentage of muscle) and meat quality.

France Hybrides is a subsidiary of Glon – the first French animal production and food processing group involved in pig genetic improvement, reproduction and semen diffusion.

Some 180,000 sows are now sold per year in 14 countries across three continents – Europe, Asia and North America – through subsidiaries, distributors or commercial agents.

Genetic improvement in France Hybrides is led on three pure bred female lines – the FH004, FH012 and FH025 – and two pure bred male lines – the FH016 and FH019.

Nucleus herds in France, the Czech Republic, Ukraine, Vietnam and Canada contain 4,000 sows.

● The Galaxy is the undisputed star of prolificacy. The Galaxy 300, Galaxy 900 and Galaxy 480 are two or three way crossbred sows that are quiet with good maternal qualities and high growth rates of their offspring.

● The 'Maxter' parental boars have fast growth and good carcase quality. The Maxter 304, Maxter 16, Maxter 19 and Maxter 486 give priority to growth, muscle percentage and meat quality to suit the different needs of the market. The Maxter confers to its offspring fast growth, homogeneity and quality of meat.

The cornerstone of France Hybrides' future performance lies with their research and development department, which is growing significantly and developing in the areas of biotechnologies, pig meat quality and embryo transfer.

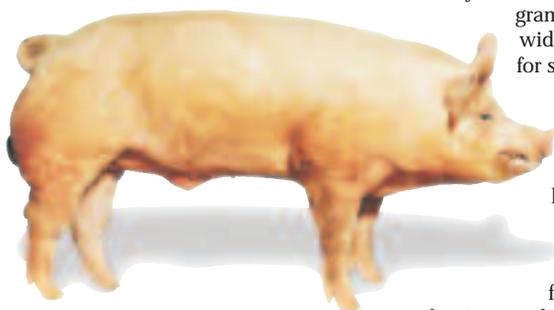
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Hypor – the world's local pig breeder

Hypor is a leading supplier of swine genetics who understand the real needs of local markets.

Their strategy is based on the "Think Global, Act Local" philosophy which means:



The Rock-Y.

- Local production according to local standards.
- Local product innovation enhanced by centralised R&D.
- Local marketing programmes and coordinated approach across all markets.
- Local technical support platform to support local sales.

With this approach, Hypor is able to offer superior breeding pigs focused on local performance needs, available through local high health production facilities.

The key is their breeding programme, which is widely recognised for supporting regional, local and individual breeding performance. Customised breeding solutions focused on local

production conditions and processing requirements are delivered through local Hypor operating companies in Canada, Belgium, China, Germany, Italy, Japan, Mexico, Netherlands, Philippines, Poland and Spain.

Hypor sirelines offer choices tailored to local production.

The progeny of Hypor sirelines excel in growth rate and feed



The Duroc.

conversion and slaughter pigs result in meat quality higher than industry averages.

● The Genex Duroc is a purebred terminal sire with very fast growth rates, superior meat quality, high throughput. Loin depth >6 mm at 92kg carcass weight and average back fat thickness of 17mm.

● The Rock-Y is a white Duroc x Yorkshire terminal sire that produces strong piglets, optimises feed efficiency and carcass performance. Loin depth >62mm at 92kg

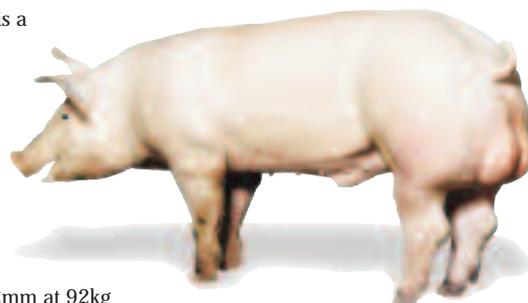
carcass weight and average backfat thickness of 16mm.

● The Bod-Y is a Pietrain terminal sire with up to 80% carcass yield, increased percentages of primal cuts and extremely high loin spread. Loin depth >64 mm at 92kg carcass weight and low back fat thickness, around 15mm.

Get productive with a tailor made programme and take advantage of Hypor's global expertise.

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The Bod-Y.



ACMC pigs – tested, approved and recognised

In the 36 months since the launch of its seven new breeds of production pig, Yorkshire, UK, based ACMC has seen demand soar for its genetics, technical support and profitable pigs.

Available as live animals or via artificial insemination, ACMC breeds are highly productive in all conditions, cost effective with good longevity.

The ACMC technical team has created systems for in-house production, monitoring and support.

The technical team has also developed a new carcass assessment procedure to be used on the live pig which, when employed along with increased litter size trait heritability through the company's gene evaluation program (GEP), more commercial rapid genetic progress is being made.

GEP, incorporating BLUP technology, is used to analyse on-farm performance test data uploaded by electronic transfer to the UK, providing instant results.

In addition, data from the new Windows based pig farm man-

agement software system Pig-Com, launched at the recent European Pig & Poultry Fair following five years development and use on ACMC farms at home and abroad, is adding further phenotypic data to the genetic development programme.

ACMC tests thousands of dams on farm each year, measuring maternal traits such as age at puberty, litter size, milk yield, breeding intervals, individual piglet birth weight and 21 day litter weight.

Selected breeders have to have sound confirmation and display good teat underlines.

As the carcass of any dam line is ultimately responsible for half the final product, feed intake, speed of growth and muscle and fat depths are also measured and included in the selection index.

As group housing systems become more commonplace, females must lack aggression.

Exclusive to ACMC, the female has at its foundation the Meidam dam line GGP female.

DEFRA approval was carried out at ACMC, auditing recording and breeding systems and on-farm adherence to procedures at the genetic nucleus as well as other multiplication sites, resulting in official recognition for the Meidam as a pure breed under the terms of European Commission Decision 09/501/EEC.

The Meidam's outstanding prolificacy, durability and carcass quality make her suitable for any breeding system and ideal for in-house multiplication.

Easily replicated and available under licence worldwide, the ACMC system is a scientifically developed breeding hub programme.

Mating the ACMC specialist 'Vantage' brand boars with the AC1, farmers at home and abroad can now produce a bespoke processing pig capable of delivering the highest quality at heavy weights and of meeting stringent contract requirements, including in niche markets.

Sire line testing is as extensive with ACMC on-farm testing individual feed intake for over 3000 male sire line females annually.

Using phenotypic test data and gene marker selection, testing procedures are focused on lean tissue food conversion, lean tis-

sue growth, muscle depth and meat quality traits.

Further selection is carried out based on physical uniformity, locomotion and libido prior to a boar embarking on his working life.

With DEFRA approval now confirmed, all ACMC purebreds have been recognised to a trans-European standard and the company's internal production systems and processes rigorously scrutinised.

ACMC pigs are correctly produced, monitored and continually tested, matching the highest standards and guaranteeing quality in generation after generation.

Genetic farms have been established in Canada, Poland and Romania, while grandparent and parent stocks have been exported to Spain, Italy, the Philippines and Thailand with great success.

Distributors are now established in Thailand and the Philippines.

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Please mention
**International
Pig Topics**

when using our
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Topigs' solutions for progress in pigs

For every situation, Topigs offers a specific solution. Producers can choose exactly the right breeding stock for their farms and markets.

The Topigs 20 sow is a cross between the Z line (Large White-dam) and the N-line (Landrace), and distinguishes itself by its high level of fertility and excellent mothering ability.

Other characteristics of this sow are good health, a high farrowing index, and a large number of live born piglets per litter.

The Topigs 40 sow is a combination of two synthetic lines. This sow has a good appetite and a high feed efficiency, resulting in more cost effective production. As this sow comes in heat rapidly, it can produce a large number of piglets per year. This sow also performs very well under warmer conditions as well as in large farms because of her ease of management.

Top Pi is the pure bred Pietrain boar from Topigs. The Top Pi has been selected specifically for the production of pigs with a high lean meat content. The very good conformation and high percentage of premium quality meat are important characteristics. This boar is 100% stress free.

Tempo is a perfect terminal sire for producers who strive for total

economy. Its progeny are strong and uniform with a good appetite resulting in a high daily gain and an excellent meat quality. Tempo is a boar that gives piglets with extra vitality, which is a powerful weapon in the battle against PMWS.

Topigs improves the breeds and lines of the Topigs breeding programme continuously using large purebred populations all over the world for breeding value calculations.

In addition, results from commercial herds are included for breeding value calculations. Progress is achieved on many traits in a balanced way.

The results of this effort to gain genetic progress are impressive.

Fig. 1 shows the genetic progress in total born piglets. The annual improvement is constant and is on a level of over 0.2 piglet per litter.

Fig. 2 shows the genetic progress of the Tempo and Top Pi boar. The Topigs selection index (TSI) combines the total genetic progress. Ten points can be valued as approximately one Euro.

This means for the last five years the boars of Topigs achieved a, improvement in profit of 3-5-4 Euros per slaughter pig.

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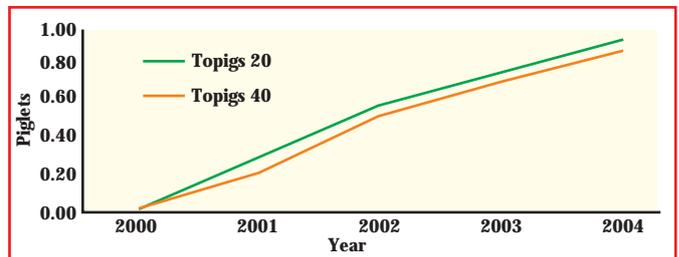
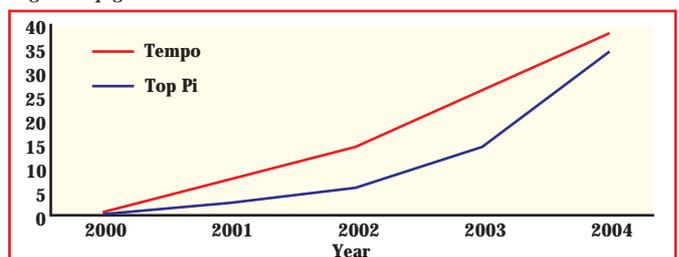


Fig. 1. Litter size.

Fig. 2. Topigs selection index.



UPB continues to grow market share

UPB Ltd, part of the UPB Europe group (UPB in the UK, UPB Espana in Spain as well as companies in Argentina, Canada, Germany, Greece, Italy, the Ukraine and Uruguay) continues to expand.

The group now has annual worldwide sales of more than four million slaughter pigs, with UPB Ltd making a substantial contribution to this total.

Following the major successes



The Alba.

in independent trials reported in last year's International Breeder Review, the latest year has seen more highly positive performance results for UPB stock.

In the Ukraine, UPB pigs in commercial trials have shown highly significant benefits in pigs weaned (plus 2.04 pigs/sow/year), growth rate (plus 111 gpd) and feed conversion (improved by 0.39).

In Spain, the latest annual central test results from IRTA showed that UPB Landrace and Large White boars were significantly more lean and less fat than competitor pigs.

Also in Spain, the excellent conformation of UPB lines has been demonstrated in conformation tests (including general conformation, head, neck, colour, skin, back, loin, thorax, ham, legs and reproductive organs) where UPB pigs outperformed competitors.

These results confirm that the UPB Europe technical programme is delivering both excellent on-farm performance and outstanding conformation for its customers.

Increasingly, UPB is supplying genes packages to GGP/GP or 'closed' herd programmes around the world via AI. This is available from purebred semen from the highest ranked dam line Large White and Landrace boars as well as from specialist sire lines, such as the Alba and Midas.

Both terminal sires were developed in a sophisticated genetic programme over many years to give excellent on-farm performance combined with outstanding carcass and meat quality. The commercial progeny have consistently beaten competitors in a range of independent trials.

As well as current achievements, further successes will come from the unique UPB Europe genetic programme.

Real benefits are being achieved from the use of advanced BLUP in three key sow traits (litter size, litters per sow per year and milking ability/piglet growth).

There are now annual improvements in all these traits showing benefits of some £1.82 (€2.60) per pig per annum at the commercial level.

In addition, increases in feed intake potential have been built in to all genotypes to ensure that appetite 'keeps up' with the demands of lean growth.

This is essential for the needs of the increasingly prolific sow so that she can milk and re-breed into the future without the increasing failures seen in many competitor pigs, particularly in hotter climates.

UPB will continue to supply a range of animals and semen to fulfil different market needs and their specific requirements.

Direct linkage with the 'end



The Midas.

market' will continue to grow, as will the supply of veterinary, technical and genetic services to high health and 'closed' breeding programmes.

UPB's future will continue to be focused on combining practical production experience with the latest genetic and breeding technology to ensure that the producer can meet the increasing demands of the market place.

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Customised programmes to meet market needs

JSR Genetics was formed in 2002 with the acquisition of Cotswold Pig Development Company by the newly merged JSR Healthbred and Newsham Hybrid Pigs.

The result is the largest British pig breeding company, with an extensive range of products marketed in all the world's major pig producing countries through the established brands – Newsham, Cotswold and Healthbred.

JSR Genetics supplies breeding stock and genetic

support to partners and franchise holders in Great Britain, Eire, Western Europe and Japan, South Korea, Thailand, Australia, New Zealand, the Philippines, Brazil, Argentina, USA, Canada and Mexico, and to direct customers around the world.

In addition to five damline Great grandparent breeds – Large White, Landrace, Duroc, 16x and 12x – the company has four terminal sirelines – Yorker, Quantum, 2006 and Titan.

The parent sow range includes the Genepacker 90, Genepacker 120 and the Gold X. To supplement this product range, JSR Genetics offers a comprehensive AI service, both in the UK and internationally, which includes fresh semen, semen extenders and an innovative range of AI products to ensure maximum fertility and conception.

The company has undertaken over 40 years of genetic improvement, with the additional benefit of BLUP (Best Linear Unbiased Prediction) computer technology since the mid 1980s.

BLUP selection is geared toward traits of maximum economic importance, including piglets born alive, growth rates, optimum subcutaneous fat, high lean meat percentage and reduced feed usage.

Physical selection traits include teat number and placement, leg strength, robustness, conformation and longevity.

The aim is to produce the maximum number of viable piglets which will grow lean meat economically to very high slaughter weights with the parent sow able to milk well, re-breed regularly and with good appetite to ensure a long, productive life.

JSR Genetics have established nucleus herds in 16 countries to ensure the products are selected for, and can perform in, a wide range of climatic conditions.



The Titan boar from JSR Genetics.

Their claim 'Superior genetics, environmentally adapted' is not without foundation and is supported by many independent trials conducted in their target markets.

The JSR commitment and promise with regard to pig health ensures the customer knows the health status of the genetic supply and can, therefore, facilitate an integration programme to maximise the value of the incoming stock.

JSR Genetics continue to strive for excellence to ensure their pre-eminent position is maintained and that their customers continue to profit from the products, services and advice available to them from the JSR technical support team.

JSR Genetics recognise the importance of meat quality, individual tastes and country preferences and can supply customised breeding programmes to ensure the exacting demands of customers, processors and consumers worldwide are met.

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PIC – boosting profits through genetics

PIC, the international leader in providing genetically superior pig breeding stock and technical support, maximises genetic potential for commercial pork producers.

It combines quantitative sciences with leading edge biotechnology to develop non-GMO breeding stock; allowing major producers to breed healthier animals more cost effectively and provide higher quality products to consumers.

Operating for over 40 years, PIC's success is attributed to its thorough concentration and significant investment in aspects of genetics, technology and health, as applied to the market.

PIC adopted an innovative method of calculating its breeding values in January 2005.

Called Crossbred Breeding Values (CBV), these calculations now include information from crossbred siblings of the nucleus sires from real commercial environments in North America and Europe.

No longer is it necessary to assume that parents producing the best purebred animals in highly environmentally controlled facilities are also the best parents of crossbred animals in commercial facilities.

Use of performance data from the crossbred siblings will improve the accuracy of the breeding values by providing more data.

PICmarq is the brand name PIC uses for its DNA marker technologies. PICmarq is incorporated within the day to day genetic evaluation of breeding values for selection of commercial boars and gilts.

By unlocking valuable genomic

information, PICmarq is delivering tangible benefits for customers through products and programmes at all levels of the pork chain.

These programmes include selection to improve growth rate, lean meat yield and disease resistance; together with selection for post farm gate attributes such as water holding capacity, juiciness, tenderness and traceability.

Most recent examples of this program include EDEKA Südwest Fleisch GmbH in Germany, for a pool of boars, and Gorzagri in Northern Italy focusing on the Parma ham industry.

With its diverse range of genetic lines PIC has commercial options to suit individual requirements.

Market leading solutions include the Camborough range of parent gilts, selected for exceptional longevity and ability to deliver large litters of viable pigs to heavy slaughter weights.

The large range of terminal sires such as the PIC280, PIC327, PIC337, PIC408, PIC410, combined with the technical programme, allow custom tailoring within each sire for specific production and abattoir attributes.

The CBV programme is delivering the growth, lean, efficiency and meat quality benefits, required in litters of robust progeny, faster and more accurately than ever.

Research and development in genetics and genomics, together with practical application focused on the needs of the market, will continue to make PIC products the market leading choice for the complete pork chain.

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The 327 black boar is one of PIC's market leading AI boars developed using PICmarq to deliver robust, lean growth efficiency.



The Neckar parental boar.

Pen Ar Lan – a rational and innovative selection

Pen Ar Lan, specialists in pig genetics since 1972, are known for their capacity to innovate.

Behind the discovery of the RN- or Napole gene in 1985, Pen Ar Lan is also the first company to have succeeded with a Sino-European parental sow.

Thanks to the quality of its products, the P76 and Neckar

parental boar combines extreme growth potential, very high lean meat percentage, a progeny with high vitality and a meat quality level comparable to the Duroc.

The Neckar is a new parental boar especially selected on the loin area with the newest technologies. It combines good growth potential, very high lean

Slaughter pigs produced with the P76 parental boar

No. of animals from	145
19 Canadian commercial farms	(76 females & 69 castrated)
Age at the beginning (days)	67.06
Age at the end (days)	141.14
Weight at the beginning (kg)	31.28
Weight at the end (kg)	109.13
Average daily gain (ADG) (g)	1061
Feed conversion	2.32
Fat thickness (ultrasonic measurement) (mm)	13.39
Muscle thickness (ultrasonic measurement) (mm)	63.83

For this test, no promoters were used in the feed.

Table 1. 2004 Official test results organised by CDPQ at the Deschambault Station in Canada.

parental boars and the Naïma parental sow, Pen Ar Lan have directed its development towards international markets very suc-

cessfully, especially in Europe and North and South America.

With the Naïma parental sow, Pen Ar Lan proposes a unique

2003 results	10% best Naïma farms	25% best Naïma farms	Naïma
Number of litters	13,885	34,549	106,000
Total born	13.9	13.8	13.4
Live born	13.1	13.0	12.5
Weaned/litter	11.9	11.7	11.1
Weaned/productive sow/year	30.0	29.4	27.4
Number of litters/culled sow	5.7	5.7	5.5

Table 2. Results for the Naïma parental sow.

cessfully, especially in Europe and North and South America.

With the P76 and Neckar parental boars, Pen Ar Lan proposes a range of parental boars all certified for their meat quality thanks to their RN and halothane genes free status.

The P76 is the boar to produce the best meat quality at the lowest cost. Tested at the Deschambault Station in Canada, the P76

Sino-European sow which has been selected for more than 23 years. The strongest points of the Naïma are to combine a very high prolificacy, exceptional mothering abilities (very important milk production, 14.8 teats in average, easy and rapid farrows), longevity, very good carcass quality and piglets with strong vitality.

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