# A DYNAMIC PHILIPPINE SWINE INDUSTRY: KEY TO MEETING CHALLENGES AND TECHNOLOGICAL INNOVATIONS

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## ABSTRACT

*In recent years, the Philippines have seen a robust swine industry, with record high farm gate price per kg of live hogs. This augurs well for swine raisers considering the eradication of Foot and Mouth Disease as well as the absence of major disease outbreaks. The improved housing which resulted in the proliferation of tunnel ventilated houses was one of the contributory factors for such a phenomenon. With improved air quality inside pig barn, respiratory diseases were controlled resulting in better feed conversion of hogs. Improved post-harvest technologies for corn have also minimized incidence of aflatoxin thus resulting in safe and effective formulation of diets.*

*The presence of a swine breeder farm accreditation program tasked with the responsibility of ensuring the genetic quality of breeder gilts and boars through periodic ocular inspection of more than 30 breeder farms in the Philippines has guaranteed an improvement of reproductive parameters for swine. A yearly monitoring by a swine research foundation where volunteer breeder farms make available their production records has been very indispensable in providing effective management strategies for continuing improvement of farm efficiencies to swine farms in the country.*

*A swine genomic research program is underway in partnership with the academe, government and breeder farm associations to produce the most appropriate breeder pigs and harness further their growing potential and carcass merits. Natural pig farming to address climate change and other environmental concerns is also spreading fast especially in the countryside. This is being spearheaded by the concerned government agencies in partnership with organic agriculture advocates or practitioners. Finally, waste treatment facilities to convert biogas into electricity have been installed to numerous breeder farms with most of them enrolled in the "Clean Development Mechanism" program whereby carbon credits are sold. Indeed, the dynamism of the Philippine swine industry is in full swing, and partnership with each Asian neighbor would be very indispensable in preparation for the integration of the ASEAN Growth Region and Economy in the near future.*

Keywords: Swine Breeder Accreditation Program, Swine Genomic Research Program, Natural Pig Farming, Clean Development Mechanism

## INTRODUCTION

The Philippine hog industry has been undergoing a tremendous stride ever since it was certified free from the dreaded Foot and Mouth Disease (FMD) without vaccination by the Office International des Epizooties (OIE) or World Organization for Animal Health in May 26, 2011. Moreover, the Declaration would now enable the Philippines to finally export particularly to ASEAN and Asia Pacific regions, livestock meat products mainly pork.

Several policies and memoranda of agreement related to enhancing of swine production efficiency as indicated in Table 1, under government initiative demonstrates the dynamism of the swine industry in the Philippines. Moreover, a yearly "Boar Auction" which is being jointly sponsored by a privately managed swine research and

the government agency underscores the seriousness of the Philippines in supporting the genetic improvement of the swine stocks.

With the growing awareness of swine farmers on the importance of housing particularly air quality inside the pig barn and a year round comfortable temperature which can be made possible through tunnel ventilation and odorless lagoons, the farrowing rate, which is 78 % can be expected to improve in the coming years.

Table 1. Laws and policies related to enhancing the efficiency of the swine industry[a].

| ITEM | Nature of Collaboration/Function |
|---|---|
| DA[1]1 and TESDA[2] | Memorandum for Swine Skills Training |
| GAHP[3] | Code for Good Animal Husbandry Practices |
| Organic Agriculture for Livestock | Enacted Law mandated organic rearing of pigs |
| DA Administrative Order No. 10 | Guidelines for Organic Demo and Training Farm |
| DA Administrative Order No. | Guidelines for the Swine Breeder Farm Accreditation Program |

[1]Department of Agriculture
[2]Technology Education and Skills Development Authority
[3]Good Animal Husbandry Practices

## SWINE INDUSTRY STATISTICS IN THE PHILIPPINES

The country's total swine inventory as of July 1, 2013, stood at 11.88 million heads as shown in Fig. 1. This was 0.62 percent lower than last year's inventory of 11.96 million heads. Stocks in backyard farms went down by 1.18 percent while that in commercial farms grew by 0.40 percent against the 2012 level. About 64 percent of the total stocks were raised in backyard farms and 36 percent were in commercial farms. During the first half of 2013, hog production reached 956.25 thousand metric tons liveweight or 2.36 percent higher than last year's level of 934.19 thousand metric tons liveweight as indicated in Fig. 2. Prices at all market levels recorded price increases during the period January to June 2013 compared with prices in the same period in 2012. In Fig. 3 the average farm gate price per kilogram of live hogs went up by 10.37 percent. Wholesale price per kilogram grew by 16.19 percent. Retail price per kilogram of pork in Metro Manila increased by 4.49 percent. On the other hand, the total supply of swine in the Philippines for the period January to June 2013 grew by 0.62 percen. From 24.4 million heads in 2012, supply went up to 24.55 million heads in 2013. Of the total hogs disposed in the first half of 2013, 11.95 million heads were slaugtered and 0.72 million heads were recorded as death or losses The total number of hogs slaughtered went up by 2.16 percent while the number of death or losses dropped by 3.54 percent.

In the Philippines, the swine industry is the second largest contributor to the country's agriculture economy coming in second to rice. The preference of Filipino consumers for fresh warm or chilled pork over frozen pork gives the local industry market assurance of its products. However, the importation of low-priced beef, buffalo meat and poultry meat may create a shift in consumption from pork to these cheaper alternatives. The establishment of large-scale (1,000 to 120,000 sow level) integrated pig farms by foreign investors in free port zone using imported breeder stocks, technology, and other production inputs is an indirect importation of pork with minimal or no tariff at all. This scenario poses a threat to the local swine entrepreneurs. Hence, the local swine industry needs to modernized to ensure that it can withstand any form of competition. To enhance its global competitiveness, the government should work with the private sector in providing the livestock sector with policy reforms on importation, trade, pricing of inputs and support in terms of technology and infrastructure.

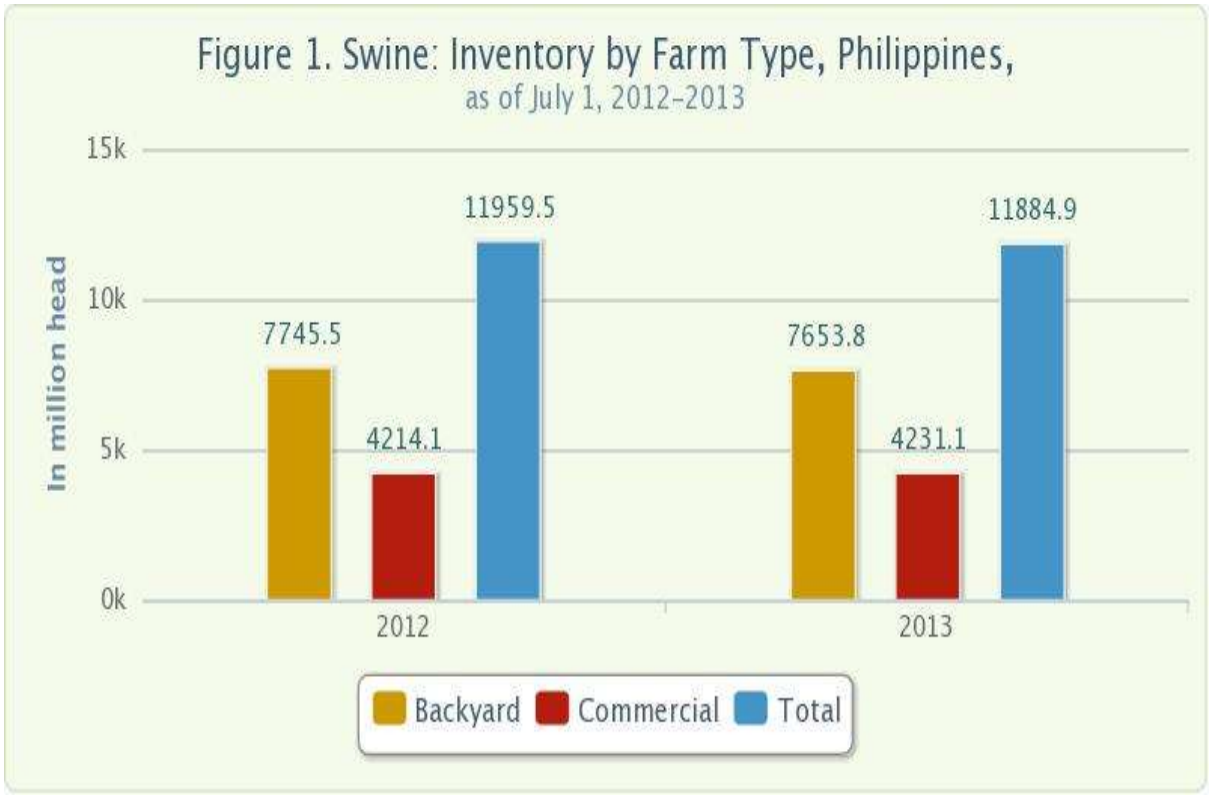


Figure 1. Swine: Inventory by Farm Type, Philippines,
as of July 1, 2012-2013
15k
10k
5k
0k
In million head
7745.5
4214.1
11959.5
7653.8
4231.1
11884.9
2012
2013
Backyard
Commercial
Total

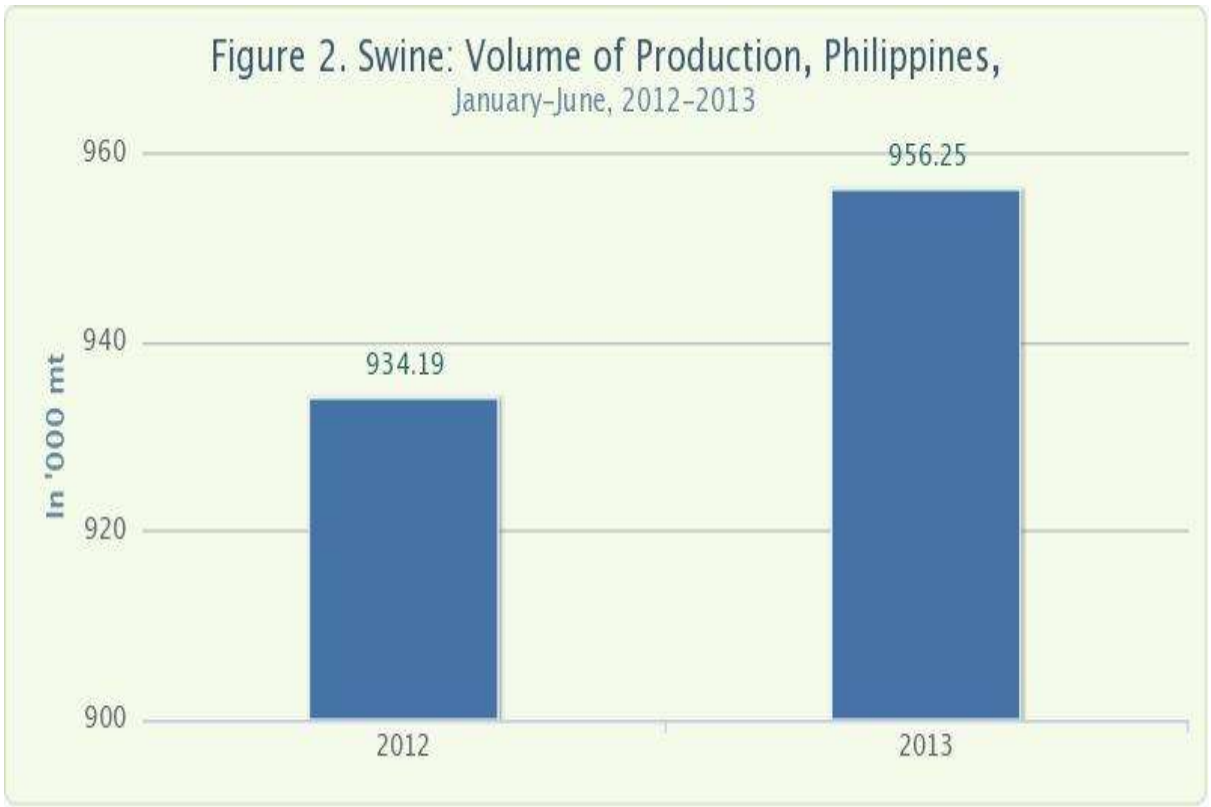
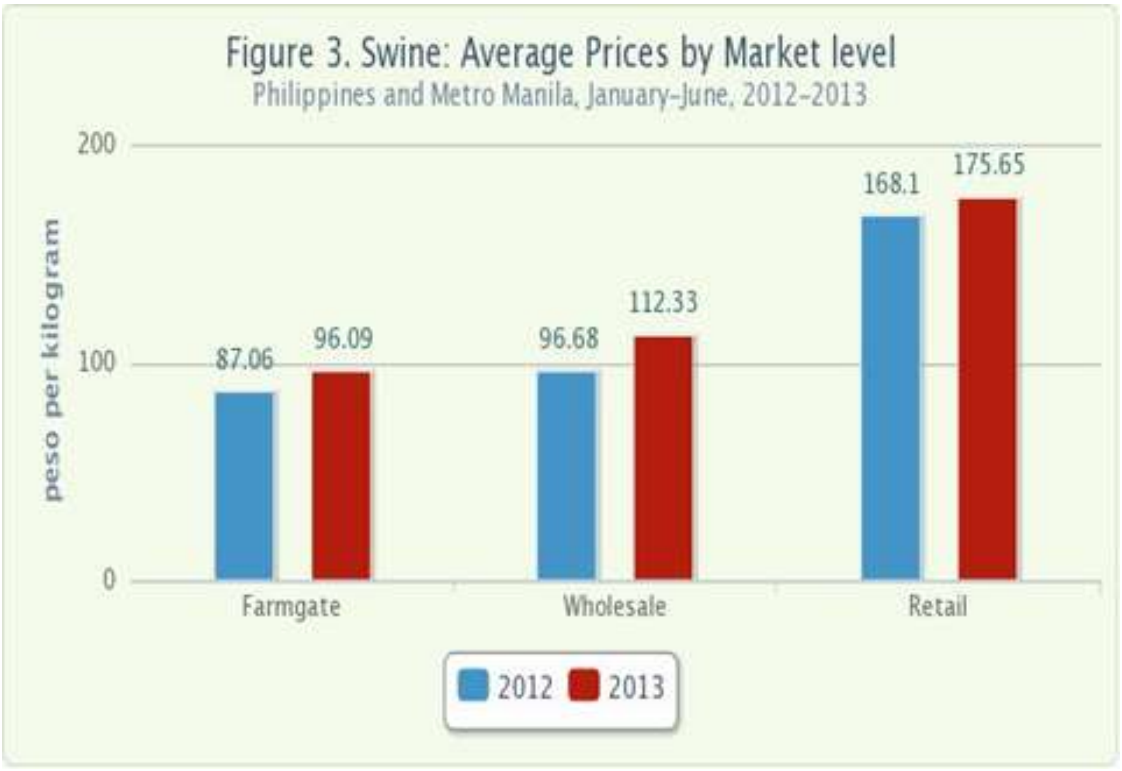


Figure 2. Swine: Volume of Production, Philippines,
January-June, 2012-2013
960
940
920
900
In '000 mt
934.19
956.25
2012
2013




## STATUS OF ORGANIC AGRICULTURE (PIG FARMING) IN THE PHILIPPINES.

To date, organic agriculture products are slowly penetrating the shelves of large supermarket chain and restaurants due mainly to the broadening demand for safe food among the growing health conscious Filipinos. On the other hand, exports of Philippine organic products are estimated to have reached USD 18 M in 2006. This small compared to the growing global demand for organic food and beverages estimated to have reached USD 15.6 billion in 2009, which is increasing on the average by over USD 5 billion a year. Major market for the organic food products are the United States followed by the European Union and Japan as reported by BAFPS.

There are also a number of semi -commercial size backyard native pig fattening (150 -250 heads fattening cycle up to 30 kg marketed as lechon or roasted pig to entrepreneurs who own several chains of lechon kiosks) being subsidized by government institution. Cheap and potential organic feeds like "San Fernando Gabi" a leafy nutritious root part have been identified and popular among farmers as reported by Reynoso. The concerned agency in cooperation with external funding agencies like the Japanese International Cooperative Agency provides funding for the initial stocks as well as feeds for the first 30 days for one production cycle. On the other hand, the farmer –owned cooperatives will have the housing, labor and organic pig diet (combination of forages and concentrate by products in the farm) as their counterpart funding.

Finally, the natural pig farm elicited further funding from state owned banks and training institutes of the government in Yolanda typhoon ravaged victims of the residents of Tacloban and Ormoc which will provide them a sustained livelihood assistance. With such strategy, swine production will further be revived in this region.

## MONITORING SWINE REPRODUCTIVE PERFORMANCE

A yearly monitoring by a swine research foundation where volunteer breeder farms make available their production records has been very indispensable in providing effective management strategies for continuing improvement of farm efficiencies to swine farms in the country.
Under these monitoring program , volunteer breeder farms continuously shared their farm performance data for

the last 19 years. The swine research foundation was first established by the government and later on was managed by the private commercial farms with the government still serving and giving advice in the background.

The 11-year swine performance monitoring program from 2003 to 2013 resulted to an improvement of litter size at weaning from 8.55 to 8.77 and also a reduction in pre-weaning mortality from 10% to 9.43%. Weaning age was also reduced from 30 days to 28.39 days On the other hand Farm Efficiency improved from 3.5 to 3.2 indicating better genetics and nutrition program for the stocks resulting to faster turnover of stocks , which could be attributed to higher price of slaughter hogs. Finally, piglets weaned per sow per year barely increased from 19.2 to 19.33 while pigs per sow per year decreased from 18.5 to 17.61, PSIRDFI and PCARRD (2013). which needs some technical interventions.

## SWINE BREEDER FARM ACCREDITATION PROGRAM OF THE PHILIPPINES

The Swine Breeder Farm Accreditation Program of the Philippines was established in 2003 and later its guidelines revised under Administrative Order No. 23, Series of 2005. Its objectives was to identify, accredit and promote swine farms with genetically improved quality breeders; and to sustain the advanced status of the swine industry by ensuring availability and wide distribution of good quality breeder stocks even among small-hold farmers.

Table 2. List of accredited swine breeder farms in the Philippines.

**SWINE BREEDER FARMS ACCREDITATION PROGRAM (SBFAP)**
**(Accredited Farms as of January 5, 2013)**

**JHON & JHON FARMS, INC.**
Accreditation No. 008-002
Farm: SitioHalang, Bo. Macamot, Binangonan, Rizal
Offc.:Sarangaya St., White Plains, Quezon City
Tel. Nos. 02 652-6482Fax 911 4757
Website: jhonandjhonfarms.com
Contact Person : Mr. Arthuro (Chito) F.Aniban

**LUZ FARM, INC.**
Accreditation No. 008-004
Farm: Brgy. Pinagsibaan, Rosario, Batangas
Offc.: Km. 19 Amang Rodriguez Ave.,cor. M.L. Quezon St., Manggahan, Pasig City
Tel. Nos. 900 0392/0917 577 1647
Email: docp@luzfarms.com/Fax : 671 6345
Contact Person: Dr. Dexter Oliver C. Pablo CP 0917 506 3427

**JVC FARM, INC.**
Accreditation No. 009-013
Farm: SitioHilirangBuli, Lagalag, Tiaong, Quezon
Telefax: (049) 585 4139/ CP: 0922 819 6495
Contact Person: Mr. Vivencio D. Tiu

**GL GEDDY'S PIGGERY FARM**
Accreditation No. 009-030
Farm: Tumbaga 1, Sariaya, Quezon
Offc.:Geddy's Poultry Supply,National Road, Sariaya, Quezon
Tel No.: (049) 525 7815/(049) 525 9155/
Email: mami_jhanie@yahoo.com
Contact Person: Mr. Benito Tan/Juliet dela Torre

**INTEGRATED MOBILIZERS INDUSTRIES FARMS (IMI), INC.**
Accreditation No. 009-014
Farm: 0585 Brgy. Gayagaya, San Jose del Monte City, Bulacan
Telefax. No. (044) 815 8888/(0917) 842 5972/
Offc. 0922-8682446
Email:imi_farms@yahoo.com/anamallari@imifarms.com
Website: www.imifarms.com
Contact Person: Ms. Celina Mendoza/ Ms. Ana Mallari

**FOREMOST FARMS,INC.**
Accreditation No. 008-024
Farm: Bo. Pinugay, Baras, Rizal
Offc.: 448 Evangelista St., Santolan, Pasig City
Tel. Nos.: 645 2082/645 2081/Fax: 645 7138
Contact Person: Ms. Sharon T. Tan- Chief, Operating Officer/Dr. Jaime Sison-Consultant – dr_jasison@yahoo.com

**EDWARD AGRI FARM**
Accreditation No. 009-026
Farm: Manibaug, Paralaya, Porac, Pampanga
Offc.: 0508 Edsan St., Paralaya, Manibaug, Porac, Pampanga
Tel No.: (045) 323 6147/CP: 0926 757 0917
Contact Person: Mr. Enrique Chu Co Jr.

**CREEKVIEW STOCK BREEDING FARM**
Accreditation No. 009-028
Farm: Sitio Rose, Brgy. San Jose, Sta. Cruz, Laguna
Tel. No.: (049) 572 0177/ Fax (049) 808 3339
CP: 0917 800 0004
Email: jon@creekviewgenetics.com
Contact Person : Mr. Ramon King Jr./Kit Faustino

**HOLIDAY HILLS STOCK AND BREEDING FARM**
Accreditation No. 009-005
Farm:Narra Rd., Brgy. San Antonio, San Pedro, Laguna
Offc.:#2 Bartolome St.,cor. San Pascual, Capitol 8, Pasig City
Tel. Nos.: 671 4748/771 0295/Telefax: 671 4750
Contact Person: Ms. Gladys G. Nocom/Mrs. Loretta C. Galang/Lara Abejero

Evaluation and ocular inspection by a technical working group composed of representative from the government sector, private pig owners, heads of piggery associations and the academe is done every two years to assure the genetic quality of the breeder farms . As of January 2013, there were around 30 accredited breeder farms in the Philippines as shown in Table 2 with a sow level ranging from 100 to 10,000. From these accredited swine breeder farms, the Accredited Swine Breeder Farms Association of the Philippines (ASBAP) was organized. The accredited farms are classified as Great Grand Parent Farm (GGP) or Nucleus Farm, Grand Parent (GP) Farm. These farms shall have a minimum requirement as follows; for the GGP, it should have 50 sows and 10 boars per breed, while the GP should have 50 sows and 2 boars per breed, for the technical manpower, the GGP

farm should maintain a Swine Breeder specialist and a consultant while the GP farm should have an Animal Husbandman or a Veterinarian, both farms should have a minimum of 25 head performance testing facilities.The output of the GGP is to sell Grandparent gilts and boar while the GP farm is to produce Parent Stocks or F1 crossbreds gilts and boars. Other requirements of the farms to be eligible for accreditation are: must be a regular entity with a business permit to operate and must have a backfat tester or lean meter. Finally, they must have records of lineage of animals (lines/strains used), pedigree record, average daily gain and feed conversion efficiency records.

## SOLID WASTE AND ENVIRONMENTAL MANAGEMENT

There are several commercial swine farms in the Philippines who have installed the Covered Inground Aerobic Reactor (CIGAR), resulting to generation of electricity from biogas. Some farms installed the CIGAR through collaboration with the Clean Development Mechanism (CDM) whereby $CO_2$ that are trapped are converted into carbon credits and valued per unit of Carbon Emission Reduction (CER). For odorless and flies free swine farming, a concoction of odor erasing microbes, emulsifiers, nitrogen fixing bacteria, probiotics are mixed and broadcasted to lagoons and manure at an inclusion rate of 5 grams per square meter. Moreover, swine manure treated with the odor erasing premix can be converted into organic fertilizer when mixed with equal amount of bulking agents such as rice hull, boiler ash, mudpress, bagasse, rice straw and many more. Odorless pig houses for the organically and naturally farmed pigs is possible by the addition of a odor eraser premixes on a concrete less floor that is almost 1 meter deep and alternately spread with rice straw, mountain soil or soil high in organic matter, the odor eraser premix and rice hull. This litter floor material was found to be effective in neutralizing ammonia as well as other obnoxious gases that are present in the feces.

Even swine septic tanks are broadcasted with odor eraser compounds at a rate of 200 grams per 240 cubic meter volume for 7 consecutive days and a weekly application for maintenance as demonstrated in Fig. 4a and Fig. 4b The sludge are pumped out and when this is mixed with equal amount of bulking agents, an organic fertilizer can be produced to fertilized vegetables planted in the adjacent farms as shown in Fig. 5.

Fig. 4a. Swine lagoon treated with odor erasing microbeS

Fig. 4b. Septic tank treated with odor eraser

Fig. 5. Sludge for organic fertilizer

## SWINE GENOMIC RESEARCH PROGRAM

A swine genomic research program is underway in partnership with the academe, a government operated research institute and breeder farm associations to produce the most appropriate breeder pigs and harness further their growing potential and carcass merits. In this research, certain genes are identified and tap to produce the most ideal breed under Philippine condition

## CONCLUSION

Swine industry in the Philippines is at its peak and biosecurity protocols are intact which resulted to the reduction of major disease outbreaks in recent years. The reduction of number of backyard raisers from 75% to 35% was instrumental in a better health status of Philippine swine herd. Most backyard raisers then were not aware of disease and health program as for them it was an additional investment.

Modernization of swine buildings and facilities particularly in the semi-commercial and commercial scale was made possible due to liberal credit facilities from lending institutions contributed also to better health condition of swine. Effective post-harvest facilities and technology for major crops improved the feed conversion performance of swine.

Effective and reliable technical interventions on scholarly works related to swine genomic research is underway. This will further enhance the quality of genetics particularly for growth rate , feed conversion and carcass quality. With the established linkage of academe, government research institute and swine associations, it will not be long when the Philippines will be able to produce its truly owned Philippine swine breed adapted to it environment.

Finally, the high price of live weight hogs will finally improve the life of farmers, which will further enhance an already robust swine industry in the Philippines.

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