



# Pig Management Guide

[www.the-BIG-feed.com](http://www.the-BIG-feed.com)



@FarmNutramix

### TECHNICAL SALES MANAGER

Winston Thomas  
876-382-8886  
[Winston.thomas@mycbgroup.com](mailto:Winston.thomas@mycbgroup.com)

### VETERINARY SERVICES

Dr. Gabrielle Young  
876-279-9576  
[Gabrielle.young@mycbgroup.com](mailto:Gabrielle.young@mycbgroup.com)

### EXPORT MANAGER

Sylburn Thomas  
876-551-1008  
[Sylburn.thomas@mycbgroup.com](mailto:Sylburn.thomas@mycbgroup.com)



# Content

<b>Record Keeping</b>	<b>4</b>
<b>Newport Genetics Breeding Program</b>	<b>6</b>
<b>Selection Of The Replacement Gilt</b>	<b>7</b>
<b>Breeding (Artificial Insemination)</b>	<b>9</b>
<b>Benefits Of Using AI</b>	<b>9</b>
<b>When To Inseminate</b>	<b>11</b>
<b>Storing Semen</b>	<b>14</b>
<b>Gestation (Pregnancy)</b>	<b>15</b>
<b>Pregnancy Checking</b>	<b>16</b>
<b>Pre-Farrowing (Before Birth)</b>	<b>18</b>
<b>Farrowing</b>	<b>19</b>
<b>Assisting Problem Litters</b>	<b>24</b>
<b>Feeding Systems</b>	<b>24</b>
<b>During Lactation</b>	<b>26</b>
<b>Piglets In Farrowing</b>	<b>28</b>
<b>Piglets, Growers And Finishers</b>	<b>30</b>
<b>Replacement Gilts</b>	<b>32</b>
<b>Best Practice Feeding Strategy For Replacement Gilts</b>	<b>32</b>
<b>Sows</b>	<b>33</b>
<b>Feeding Roughage</b>	<b>34</b>
<b>Water</b>	<b>35</b>
<b>Finishing Pigs</b>	<b>36</b>

<b>Grower-Finisher Management</b>	<b>36</b>
<b>The Pigs' Behaviour Is A Good Indicator Of Comfort</b>	<b>37</b>
<b>Housing</b>	<b>38</b>
<b>Floor Types Used For Pigs</b>	<b>39</b>
<b>Stocking Density</b>	<b>40</b>
<b>Grouping Pigs</b>	<b>42</b>
<b>Feeding And Watering Facilities</b>	<b>42</b>
<b>Transportation Requirements</b>	<b>46</b>
<b>Herd Health Management</b>	<b>47</b>
<b>Vaccination Protocols</b>	<b>48</b>
<b>Vaccination Protocol For Growing Pigs</b>	<b>49</b>
<b>Medication, Treatment And Therapy</b>	<b>51</b>
<b>Rules Of Thumb</b>	<b>52</b>
<b>Biosecurity</b>	<b>54</b>
<b>Good Biosecurity Practices</b>	<b>55</b>



# RECORD KEEPING

Farmers should record every event that occurs on the farm. This proves as a reference if things should go wrong. If you want to increase profit, then complete, detailed records are a must. It is important that the total production cost for the year and the total income can be determined from your records. Items that need to be recorded include but not limited to:

- Average born alive per litter
- Pigs weaned per sow
- Number litter per sow per year
- Mortality (death loss record)
- Weaning weight, growth weight and market weight
- Feed consumption and feed conversion efficiency
- Medications used on the farm
- Servicing and farrowing dates
- Days from weaning to breeding

Records must be kept. They allow the farmer to properly monitor the animal health and production, and the recorded figures are used to measure the swine facilities actual performance against target values and ultimately estimate the economic viability of the farm. There are computer based programmes that can assist with collection and analysis of records; you can consult with NEWPORT MILLS LIMITED.

**Table:** Pig performance targets for sow operations

PARAMETER		TARGETS	
Sow Operations	Poor ≤	Target	Excellent ≥

Average born alive/litter	10.5	11.2	11.9
Farrowing rate, %	75.0	82.0	88.0
Litters/mated female/year	1.9	2.2	2.4
Pigs weaned/breeding female	9.5	10.2	11.0
Pigs weaned/mated female/year	19.0	22.0	26.0
Replacement rate, %	-	40-45	-

Sow Operations	Poor ≥	Target	Excellent ≤
----------------	--------	--------	-------------

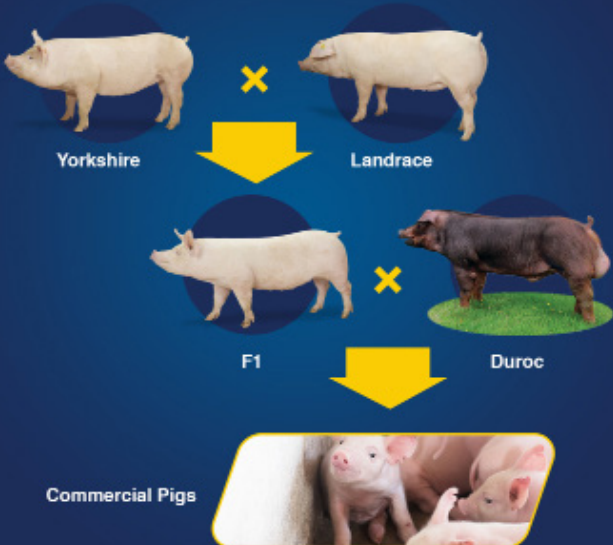
None productive sow days	60	50	35
Pre-weaning mortality %	11.0	8.5	7.0
Death rate	10.0	7.0	5.0

# NEWPORT GENETICS BREEDING PROGRAM

Newport Genetics Limited (founded in 2004) is the only certified ISO 9001/HACCAP/GMP pure bred NUCLEUS breeding facility within the Caribbean. The facility provides quality breeding stock to Jamaican farmers and the Caribbean. The facility follows a simple three way cross with the final result of the commercial pig that produces the award winning Copperwood Pork.

The first two crosses use two maternal lines of pigs; the Landrace and the Yorkshire to produce the F1 gilt – a combination of all the best traits of these two breeds; maximizing a process called Hybrid Vigour. The third cross involves crossing the F1 with the Duroc semen to produce the commercial pig. This commercial pig has all the characteristics of the 3 breeds to include fast growth and lean meat which is

## Three Way Cross



# SELECTION OF THE REPLACEMENT GILT

The most important part of any swine facility is the replacement gilt. The quality of the replacement gilt can be estimated by examining the performance of her sire, dam and siblings. It is always recommended that you visit the farm from which you intend to buy purchase replacement gilts to have a closer look at its operation and more importantly, records.



## Areas to be Considered When Selecting Breeding Gilts

- Gilts selected should have 12-16 evenly spaced, well developed teats to accommodate large litters.
- Gilts should be selected from sows that wean 10 or more piglets per litter and are known, according to the records, to be good mothers.
- The sire and dam of the gilts selected should be noted for large litters

of even size and fast growing pigs of good temperament. Both parents should have good conformation, stand firmly on their feet and show signs of longevity.

- Select the breeding gilts after weaning and further selection should be made at 5-6 months of age.
- Select fast growing weaners. They will likely consume less feed per unit live weight gain.
- Except for specific line breeding purposes, it is important to stay away from in-breeding by ensuring that the gilt is unrelated to the boar to which she will be mated.
- Gilt must be at least 7-8 months old at first service (mating). In addition, it is recommended that the gilt should have cycled at least twice before breeding.





## BREEDING (ARTIFICIAL INSEMINATION)

- Artificial insemination (AI) is a process wherein semen is collected from the boar, examined, processed and used to inseminate gilts or sows in heat. This is done to improve genetics with the best quality boars with superior production traits.
- The proper breeding technique places high quality semen in the right location at the right time to produce a large number of piglets born. **NEWPORT MILLS LTD** recommends that gilts should not be serviced before 7 months of age and gilts should be at least **240-260 lbs** at first service.

## BENEFITS OF USING AI

- Fast genetic improvement – faster growing piglets, better quality leaner pork
- Reduced cost of keeping boar
- Greater selection of boars available
- Farmers without a boar can inseminate sows using the AI technique

- Reduce exposure of gilts and sows to diseases from the boar

Fresh semen is best and can be purchased fresh at **NEWPORT MILLS LTD** and other locations island wide. To ensure successful insemination, sows should be in good body condition after weaning and gilts should be at the correct age and weight at first breeding. The farmer can contact Newport Mills Ltd for technical advice and training in artificial insemination. After breeding, record the breeding dates using the Nutramix Breeding Calendar.



**body condition score: 1**  
**Do not breed**



**body condition score: 3**  
**Suitable for breeding**



**body condition score: 3.5**  
**Suitable for breeding**



**body condition score: 5**  
**May have conception and farrowing problems**



## WHEN TO INSEMINATE

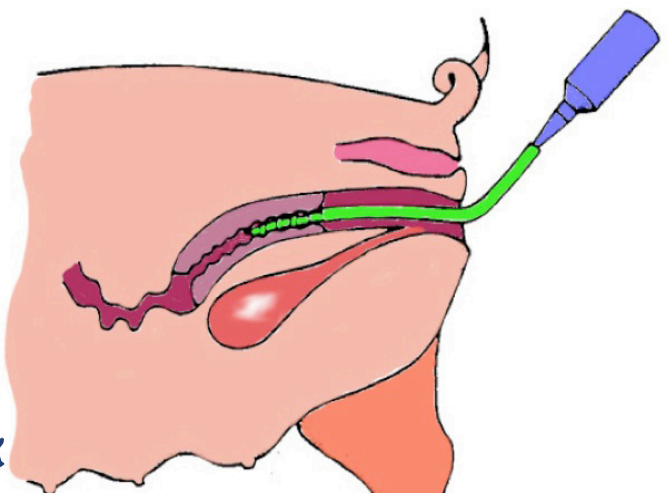
Sows and gilts should only be inseminated when they are displaying “standing” heat. Standing heat means that pressure is applied to the back of the female and the female becomes immobile. It is during this time sows would be responsive to the boar. Avoid inseminating females during the periods when they are unresponsive and moving away quickly.

### How To:

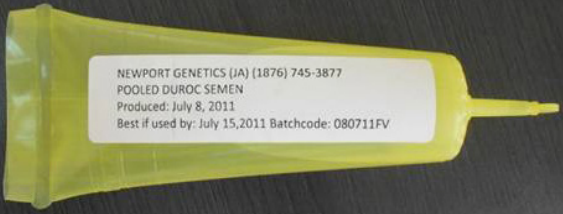
1. Wipe the vulva lips of gilts/sows in standing heat with a clean disposable paper towel to remove any dirt. Wiping can also act as a stimulus to the female before insemination. Do not use water or disinfectant to wash the ‘vulva’ before insemination, because water and disinfectant can be spermicidal.
2. Use a new, disposable catheter (provided by NEWPORT MILLS LTD) for each mating. Discard the catheter if it looks dirty or accidentally touches the

floor, stall or gilt/sow. When inseminating, gently separate the vulva lips using thumb and forefinger and insert catheter at a 45° angle through the vagina into the cervix.

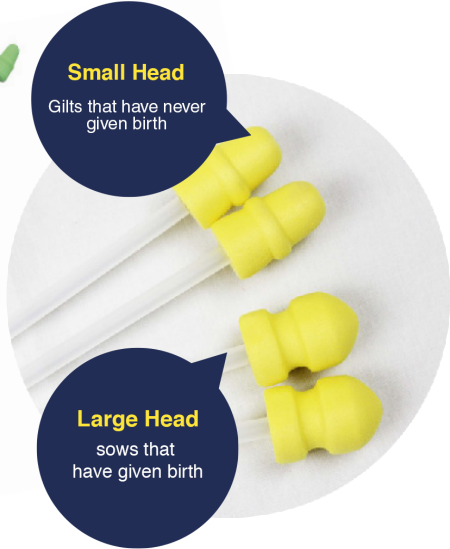
3. Remove the semen from cooler; gently rotating the semen tube in the palm of your hand. Open the tube and connect it to the catheter and allow the semen to flow from the container into the animal. Do not squeeze the semen tube during breeding.
4. Try to maximize uterine contractions during insemination by stimulating the female with back-pressure, rubbing the flanks and underline or using a teaser boar if one is present on the farm. If the gilt/sow lies down during insemination, continue with the procedure and don't make the female stand as it will interfere with uterine contractions.
5. After insemination, close the catheter to prevent backflow and leave it in place for another 5-7 minutes to encourage the transportation of semen through uterine contraction. Continue stimulating with back-pressure or a boar during this time.



# SEMEN TUBE



# CATHETERS



## Small Head

Gilts that have never given birth

## Large Head

sows that have given birth

Soft foam helps facilitate entrance of the reproductive tract with minimum risk to entering urethra and provides excellent lock into the cervix

# OTHER EQUIPMENT

(1) PAPER TOWEL (2) PORTABLE SEMEN FRIDGE (TEMPERATURE CONTROL) (3) INSULATED ENVELOPE



# INSEMINATION OF SOW WITH CATHETER & TUBE SEMEN



# STORING SEMEN

Semen must be stored at the correct temperature 16- 18°C. Protect the semen doses from sunlight.



## Note

Sperm cells can live up to 24 hours in the gilt/sow's reproductive tract and need 8 hours inside the females reproductive tract before they are capable of fertilization. Choose an effective and simple schedule of insemination based on staffing and experience of personnel. It is important to repeat inseminations as long as the female is in standing heat.

**Table 1:** Recommendations for breeding gilts

<b>Age to breed gilt</b>	<b>7-8 months</b>
<b>Weight at first breeding</b>	<b>Minimum 110-120 kg (240-260 lbs)</b>
<b>Period of oestrus cycle</b>	<b>18-24 days (Average 21 days)</b>
<b>Time of ovulation</b>	<b>Approximately 36-40 hrs after standing heat</b>
<b>Oestrus (heat) cycle to breed</b>	<b>Third heat (oestrus)</b>
<b>Number of service</b>	<b>2 (12 hrs after standing heat and 24 hrs later)</b>
<b>Occurrence of heat after weaning</b>	<b>5-7 days</b>

# GESTATION (PREGNANCY)

- Management during gestation involves feeding and watering the gilts/sows to establish proper body condition.
- Gilt/sows are pregnant for approximately 115 days. The first 30 days of pregnancy is the period of greatest risk to the embryo.
- Every effort should be made to reduce stresses during this time and pregnant animal should be handled gently.
- The gilt/sow can maintain good body condition and develop a good litter on 6lbs of NUTRAMIX Sow and Boar Ration per day (see Table 4). This feed is well balanced and has all the nutrient requirements for gilts and sows. The digestive system of the sows is at its most efficient during early pregnancy and over-feeding at this stage can cause smaller litter sizes due to early embryonic death. Over-conditioned (overweight) gilts/sows have higher still born rate, higher sow mortality and lower retention rate. Body condition management should be top priority and you should avoid breeding gilts too heavy to ensure that these problems do not arise. (Refer to Table 1 for recommendations for breeding gilts). (Refer to body sow condition chart on page 10).



There should be free access to clean, fresh drinking water at all times. The flow rate must be at least 1.5 – 2 L/minute and gilts/sows should be encouraged to drink adequate amount of water. A sign that the water is inadequate is constipation (difficultly passing faeces).

## PREGNANCY CHECKING

- The goal is to find any open females (non-pregnant) as soon as possible during the first 28-35 days of gestation.
- All gilts/sows should be inspected everyday as part of the general routine of gestation management.
- A mature boar can be used to check for signs of heat if one is present on the farm.
- Ultrasound pregnancy checks can be done from 28-35 days (Service is provided by Newport Mills Ltd)





**Table 2:** Basis scheme of pregnancy checks

## PREGNANCY CHECKS

Days of gestation	Method	Percent open females	Reason
18 – 24	Boar exposure, heat checks	80%	Regular returns
30 – 40	Ultrasound (usually large farms)	15%	Regular returns missed by 3 wks Non-regular returns Early abortions
56 – 70	Visual	5%	Regular returns missed by wk 3 and 6 Non-regular returns Abortions Not in sows



## PRE-FARROWING (BEFORE BIRTH)

Preparing for a sow to farrow is necessary for a successful operation. There are some key items that are necessary to have a positive outcome:

- Farrowing area/room
- Farrowing crate
- Nipple drinkers
- Sow feeders
- Heating lamps
- Creep feeders
- Piglet mats

All equipment must be checked and fully functional and the area must be cleaned and disinfected before placing sows into the farrowing area. Sows should be placed in the area at least 5 -7 days before the scheduled farrowing date. This allows the pregnant females time to become acclimatized and comfortable before farrowing. It is recommended that at this time pregnant females be transitioned to Nutramix Lactating ration.

The lactating ration has higher energy, protein and mineral levels that assist in preparing the sow for lactation and also allow her to maintain high milk production. Before farrowing sows should be fed 2.5 lbs (1kg) of lactating ration twice per day. Ensure that the sow has received all pre-farrowing vaccines and been dewormed before being placed in



# FARROWING

The average gestation period for gilts and sows is 115 days. There is an acronym to help farmers remember the average gestation of a sow – 333 = 3 months, 3 weeks, 3 days = 115days. It is important that farmers take note of the day the gilt/sow is bred so they can determine when the sow will farrow. From 112 days of gestation farmers should observe the gilt/sow at least twice per day for signs of impending farrowing. During this time manure must be scraped from behind the sow daily. Some of these signs include:

- Engorged mammary glands
- Leaking of milk from the teats
- Restlessness
- Reduced feed intake
- Swelling and reddening of vulva a few days before farrowing
- Clear to bloody vaginal discharge
- Rhythmic contraction of the abdominal area

Once the signs of farrowing are noted the gilts and sows should be monitored every 30-40 minutes during the process. Farrowing normally last about 2-3 hours with piglets born every 20-30 minutes. The placenta is usually passed out within 2-4 hours of the



last piglet. Sows with larger litter sizes may need assistance towards the end of the farrowing process. At times, assistance may be necessary to accomplish delivery, but should not be used until obviously needed. Gilt/sow parity, litter size, interval between piglets and history should be considered before providing any assistance. Manual examination of the birth canal to remove piglets or any obstruction requires strict sanitation, the use of obstetrical gloves and lubricants.

Heating lamps should be turned on once the farrowing process has started. It should be noted that newly born pigs cannot regulate their body temperature and supplemental heat is necessary to prevent chilling and early mortality in the piglets. Piglets are born with a body temperature of 102–104 °F (38.8–40 °F), but they lose body heat rapidly. It is important to make sure that new-born piglets are dry, warm and free of drafts. The first 12 hours of the piglets life are the most challenging time for the piglets in farrowing. It will decide which piglets will live or die and also determine the final weaning weight. Over half of the pre-weaning deaths occur in the first 3 days after birth. Provide a warm creep area with temperature between 90–95 °F (32–34 °C). Heating lamps should be placed to the side of the farrowing crates and rubber mats directly below. Piglet behaviour will indicate the comfort level of the pigs. Piglets should be lying under the heat lamp and on the mats. Piglets lying in corners and those appearing “fuzzy” and shivering indicate that they are cold and the heating system must be adjusted.



Other options available to assist in keeping piglets warm include the use of a closed box with saw dust placed inside. Also the use of powdered limestone (calcium carbonate) sprinkled in the farrowing area assist in drying off piglets quickly after they are born. Piglets that are dry and warm will nurse quickly and consume more colostrum. Failure to provide a warm area for piglets often leads to piglets having diarrhea/scouring and poor weight gains.

The gilt/sow needs a cooler temperature (60–70°F) than the piglets; otherwise they could become heat stressed. With higher temperatures, the gilt/sow's appetite and performance may be depressed affecting the ability to produce milk and loss of body condition.

After farrowing, the sow should be checked to ensure that she has adequate milk supply and that piglets are nursing. It is critical that piglets consume adequate amounts

of colostrum within the first 12 hours after birth. Small, weak piglets can be easily crushed by the sow.

Piglet navel/umbilicus must be sprayed with iodine 1%. This procedure should be continued at least twice per day until the umbilical cord has dried up.

Within the first 24 hours after birth the piglets should be weighed and the average weight of the litter recorded. Piglets should weigh between 1.3–1.8kg (2.5–4lbs) at birth (weigh at processing). Very small piglets less than 2lbs are generally non-viable and poor performers. Depending on the targets for the operation these piglets can be removed.

After 24 hours and within the next 3-5 days piglets should be processed. The following list of items can all be done at the same time period. Remember to:

- Make sure all pigs are suckling.
- Inject or give oral iron within 24 hrs after birth. The main nutrient not “adequately available” in the sow’s milk is iron.
- Clip “needle” teeth when giving iron.
- Castrate all unwanted males between 3-5 days of age.
- Identify or tattoo piglets.
- Tail dock if necessary.
- Record birth weights and litter size.
- Check for scours and treat if necessary.

The day after farrowing the sow should be checked to ensure that she is eating and

can stand in the farrowing crate. It is advised to take the temperature of the sow after farrowing to detect if fever is present. Sows having a temperature more than 104°F (40°C) can indicate an infection and should be treated with an antibiotic plus and antipyretic. Call your Nutramix veterinarian for assistance.



## ASSISTING PROBLEM LITTERS

Infrequently sows may be present that do not “milk” well or have no milk present. There are several options available to assist with these litters. Some of the piglets can be fostered unto another sow that has a smaller litter. In general, fostering should be accomplished within 24 hours after farrowing. Never load sows with more piglets than the number of functional teats.

If a foster sow is not available, then the piglets can be left with the poor lactating sow and a milk replacer can be used to supplement.

## FEEDING SYSTEMS

NEWPORT MILLS LIMITED strongly recommends that pigs be fed using simple well-designed trough or feeder systems. Floor-feeding systems although commonly used allow for feed wastage and increased parasite burdens. Feeding systems improves growth, feed conversion and aids sanitary conditions. Floor-feeding cannot be used for unlimited feeding systems. Higher carcass weight can be achieved without adding excessive fat to the carcass due to the unique formulation of NUTRAMIX Pig Rations and this allows for excellent growth and feed conversion.



**PRE-STARTER  
FEED & FEEDER**



**NURSERY  
FEEDER**



**SELF FEEDER  
FOR FINISHERS**



## DURING LACTATION

The goal is to maximize daily feed intake as soon as possible after farrowing. The more the sow eats the better for milk production which translates to better litter growth and minimizes weight loss in the sow. It is recommended that Nutramix Lactation ration be used during this period. Lactation rations have higher energy, protein, vitamin and mineral composition best suited for the heavy demands of a lactating mother. Increased levels of necessary minerals and vitamins are also present.

On the day of farrowing limit feed the sows. Feed must be kept fresh at all times. Feed lactating sows at least twice but preferably three times daily to encourage increased feed intake. The requirement for feed will be determined principally by the number of piglets reared by the sow and their weaning weight. Using the average production figures for the Jamaican pig farmer, the feed consumption for a sow can be calculated as follows: Sows weaning 11 piglets at 17.5lbs (8kg) at 28 days.

The amount of feed for sow (or gilt) can be calculated as 0.5 kg per piglet + 1% of body weight of sow.

## Example

Weight of sow = 200kg

Number piglets = 11

## Amount of feed for the sow

$(200 \times 0.01) + (11 \times 0.5)$

$= 2 + 5.5 = 7.5\text{kg}$

These guidelines should be adjusted upwards if the sow is losing weight. Ensure that the sow has feed available at night. By the next morning, if the feeder is totally empty add 0.5 – 1 Lb additional feed to the previous quantity given. Never leave lactating sow's feeder empty.

The sows/gilts may have limited appetite during the first few days following farrowing, thus a practical feeding scheme during lactation can look like the following:

**Farrowing .....2 lbs/day**

**Day 1.....4 lbs/day**

**Day 2.....8 lbs/day**

**Day 3.....12 lbs/day**

**Day 4..... full feed**

Ensure all lactating sows have access to fresh water. Make sure the water flow rate is no less than  $\frac{1}{2}$  gal/min (2 L/min). Lactating sows can consume upwards of 5 gallons/day (19L/day). The more water the sow can consume the greater the milk production.

# PIGLETS IN FARROWING

To achieve maximum growth in piglets it is recommended that Nutramix Pre-Starter be introduced as early as ten days of age. This feed is specifically formulated to be easily digested and stimulates consumption with added flavours. Feeding needs to be done under hygienic circumstances with the use of small “creep” feeders. Do not supply more feed than can be eaten 30 – 60 minutes, several times per day. The piglets should also have access to clean fresh drinking water; there are smaller nipple drinkers available for piglets. The use of Nutramix Pre-Starter allows for a gradual introduction to solid feeds and assist with preventing under-nourished piglets and reduces the chance of digestive problems (sour, etc.) later.



## CREEP FEEDER



## PRE-STARTER FEED



# PIGLETS, GROWERS AND FINISHERS

At 5 weeks, mix Nutramix pre-starter and starter and gradually switch to unlimited starter until 8 weeks. At 6 weeks, pigs should be fully on Nutramix pig starter ration and feed this until 8 weeks of age. (pigs should weigh approx. 44-48.5 lbs). At 8 weeks, mix Nutramix starter ration and grower and gradually switch to unlimited grower up to 17 weeks old. At 17 weeks, mix Nutramix grower and finisher rations and gradually switch to unlimited finisher ration up to 23 weeks of age. Pig performance target of finisher pigs at 24 weeks of age and on NUTRAMIX feed shows market weights of 104–115 kg (229–254 lbs).



**Table 3: Pig performance targets for nursery and finishing operations**

PARAMETER		TARGETS		
Nursery Operations	Poor ≤	Target	Excellent ≥	
Weaning weight at 4 weeks, kg	7.0 (15.4 lbs)	8.0 (17.6 lbs)	10.0 (22 lbs)	
Growth rate (Average Daily Gain), g	350	400	450	
Feed Conversion Efficiency	≥1.8	1.6	1.5	
Mortality, %	≥3.0	2.0	1.0	
Transfer weight at 8 weeks, kg	17.0 (37.5 lbs)	20.0 (44.1 lbs)	22.0 (48.5 lbs)	

### FINISHING OPERATION

Growth rate (Average Daily Gain), g	680	730	830
Feed Conversion Efficiency	≥3.00	2.70	2.55
Mortality, %	≥4.0	2.0	1.0
Market weight at 22 weeks, kg	86.64 (191 lbs)	91.54	101.34 (223 lbs)
Growth rate (Average Daily Gain), g	700	750	850
Feed Conversion Efficiency	≥3.00	2.70	2.55
Mortality, %	≥4.0	2.0	1.0
Market weight at 24 weeks, kg	98.4 (217 lbs)	104.0 (229 lbs)	115.2 (254 lbs)

# REPLACEMENT GILTS

Maximize feed intake prior to first breeding in replacement gilts. Allow them to eat as much as they can and plan for a minimum of about 8 lbs per day. This ensures that gilts will grow and express their reproductive potential for litter size (full genetic potential). The recommendation is to have gilts on full feed from the time they are placed in the nursery until they are bred. Flushing (increase feed intake before breeding) might increase ovulation rate in gilts.

## BEST PRACTICE FEEDING STRATEGY FOR REPLACEMENT GILTS

- **Phase 1** - 35 to 70 kg: NUTRAMIX Pig Grower Ration fed ad-libitum
- **Phase 2** - 70 kg to 21 days pre-mating: NUTRAMIX Gilt Developer Ration fed at 2.5 to 3.0 kg/d
- **Phase 3** - pre-mating to mating: NUTRAMIX Lactation Ration fed ad-libitum
- **Phase 4** - Mating to late pregnancy: NUTRAMIX Sow and Boar Ration fed 2.0 to 2.5 kg/d
- **Phase 5** - Late pregnancy to weaning: NUTRAMIX Lactation Ration



# SOWS

Sows should be fed during gestation and pre-farrowing on no more than 6 lbs of NUTRAMIX Sow and Boar Ration per day. Feed levels can be adjusted according to the stage of the reproductive cycle of the sow and the actual body condition of the animal. Free access to water should be available to sows (sows can drink 20 litres per day depending on weather conditions).

**Table 4:** Recommended Feeding Schedule Using NUTRAMIX Feed

FEED/RATION	STAGE/AGE	FEED USAGE/ per pig for the specified period	COMMENTS
Pre-Starter	10 days – 6 weeks	3.3kg	Given to baby piglets at 10 days of age whilst still nursing with sow and continued until 6 weeks
Starter	6-8 weeks	8 kg Approx. 1.2 lb/day	Pre-Starter and Starter feeds must be mixed for the first week to ease transition
Grower	8 weeks – 16 weeks	114 kg (4 bags) Approx. 1.8 kg (4 lbs)/ day	Starter and grower feeds should be mixed for the first week to ease transition
Finisher	16 weeks – 23 weeks	114 kg (4.5 bags) Approx. 2.7 kg (6 lbs)/ day	Finisher feed prevents hogs from becoming too fat
Sow and Boar	Pregnant females and boars	2.7 kg (6 lbs) per day divided into 2 feedings	Sow or Boar will consume approx. 3.2 bags in 1 month
Lactation ration	Females nursing piglets	3-6 kg (6.6-13 lbs) per day  6lb per sow + ½ lb per piglet	Nursing sow should consume approx. 3.5-7 bags in 1 month

# FEEDING ROUGHAGE

Roughage should only be fed to gestating sows. This should not be used as a substitute for concentrate feeding (see table above for recommended feeding schedule). Young good quality grass is preferred when feeding roughage (e.g. water grass). It prevents constipation in sows mainly due to the extra fibre content. Animals tend to be more peaceful when they are feeling more satisfied with a full stomach. If in doubt about feeding roughage, do not feed it to the animals and contact your NEWPORT MILLS LIMITED Livestock Support Specialists or Veterinarian for advice. If your animal is of good genetic material; meaning the pig has the maximum growth and breeding potential; then it is advisable that you feed according to the recommendations provided by NEWPORT MILLS LIMITED, as substituting feed with roughage would only slow down the growth and development of your animals.

## Negatives

Roughage should not be fed during lactation or the final stage of gestation and in growing animals. The roughage will prevent good intake of feed during these times. Roughage and other by-products tend to be very high in moisture content and this can cause spoilage and be a good medium for bacterial and fungal growth. This will have severe impact on the performance of young growing pigs.

# WATER

- Water is the most important input into any swine operation. Restriction to drinking water will lead to restricted growth and higher feed conversion.

## **NEWPORT MILLS**

**LIMITED** recommend the use of nipple drinkers as these supply a clean source of drinking water. Adjust waterers according to animal size.



- Sows will not be able to produce enough milk if not supplied with adequate amount of cool, fresh drinking water. Prolonged water restrictions or inadequate amounts can lead to reduced fertility, low litter sizes and low birth weights.

**Table 5:** Guidelines for water usage/animal/day for breeding animals

<b>Non-pregnant gilts</b>	<b>12 litres</b>
<b>Pregnant sows</b>	<b>12 – 25 litres</b>
<b>Lactating sows</b>	<b>35 – 50 litres</b>
<b>Boars</b>	<b>10 – 20 litres</b>



## FINISHING PIGS

The following calculates the minimum amount of water needed for growing pigs:

- Water (litres) =  $0.03 + 3.6 \times \text{feed intake (kg)}$
- A finisher pig requires about 3-4 litres of water for every 1 kg of feed consumed under normal environmental condition. These values will increase in periods of extreme heat.
- Water temperature of 50–60 °F (10–15 °C) is preferred, but often impossible. High water temperature should be avoided since it will affect water and feed intake.

## GROWER-FINISHER MANAGEMENT

### MANAGEMENT OF WEANED PIGS

The period immediately after weaning is extremely important in the life of the pig, having a significant impact on future performance.

Healthy pigs that are eating and growing well adjust more easily to weaning and suffer little to no effects of post-weaning lag.

The poor-doing, weak pigs are slower-growing, do not adjust well to weaning and suffer



the greatest drop in performance at weaning. The key in managing weaned pigs is to get them off to a good start to ensure ongoing success

## THE PIGS' BEHAVIOUR IS A GOOD INDICATOR OF COMFORT

Pigs should be weaning in groups into an All-In, All-Out nursery. At the time of weaning, temperature control is important for the pigs and ideally should be approximately 26–28°C for the first week. Temperatures should be gradually reduced to around 22–24 °C by 4–5 weeks after weaning.

### **The pigs' behaviour is a good indicator of comfort:**

- Lying in piles on the bellies is generally an indication of chilling (cold pigs).
- Panting is indicative of heat stress, insufficient oxygen uptake or exhalation of carbon dioxide.

Ideally, pigs should be lying comfortably on their sides, well separated from each other. Remember that high temperatures suppress feed intake and may contribute to illness. In areas where temperature control is not possible, a litter material or straw-based material may be used to provide some warmth to weaner pigs.

# HOUSING

Long narrow buildings are cooler especially in the summer months if the long axis runs from east to west. The sun should rise on the short side of the building and set on the other short side. This minimizes the amount of direct sunshine in the house as this could cause additional heat stress for pigs. The house should be suited to take advantage of prevailing winds for coolness in summer.

For pig welfare and health, flooring must not be slippery and designed, constructed and maintained so as to not cause injury or suffering to pigs standing on it.

## FULLY SLATTED PLASTIC



## FULLY SLATTED CONCRETE



## CONCRETE FLOOR



# FLOOR TYPES USED FOR PIGS

## **Fully slatted plastic**

- Very easy to wash
- Achieves best separation between pigs and faeces
- Quick drying time
- Impermeable (does not absorb water)
- More expensive than conventional flooring
- Can eventually lead to sole bruising and abrasion on knees in piglets

## **Fully slatted concrete**

- Cheaper than plastic to produce
- Used for heavier pigs as they have good weight bearing properties
- Slower to dry than plastic slats
- Partially absorbent, leading to risk of residues
- Can cause more foot damage to finisher pigs compared to solid floors

## **Concrete floor (solid)**

- Inexpensive
- Can have issues with drainage is not properly designed
- Can cause foot problems in pigs especially if surface is too rough
- Fewer issues with lameness than seen in pigs housed on slatted floors

**Table 6:** Guidelines for water usage/animal/day for breeding animals

Maximum gap between slats (mm)	
Piglets	11
Weaners	14
Grower-Finisher	18
Gilts post service and sows	20

Minimum slat width (mm)	
Piglets and weaners	50
Grower-Finisher, gilts post service and sows	80

## STOCKING DENSITY

This is the space allocated to each pig and is the maximum space required during the period the animal will spend in that pen. Stocking rates must not impair performance of the animals; adequate space is necessary for pigs to perform properly. If the space is inadequate, then the area becomes more crowded and the feed may become less accessible, leading to declining growth. Any compromises to the required stocking density for pigs may cause decreased gain in conversion, increase aggression and increase mortality and morbidity rates.



**Table 7:** Square footage requirements for pigs for all surface types

DESCRIPTION	SPACES SQFT/PIG	COMMENTS
Up to 10 kg (up to 22 lbs)	1.5 SqFt (0.14 m <sup>2</sup> )	Approximately 20-30 % of space allowance provides for dunging area
11-20 kg (up to 44 lbs)	2.5 SqFt (0.22 m <sup>2</sup> )	
21-40 kg (up to 88 lbs)	4.0 SqFt (0.36 m <sup>2</sup> )	
41-60 kg (up to 132 lbs)	5.0 SqFt (0.47 m <sup>2</sup> )	
61-80 kg (up to 176 lbs)	6.0 SqFt (0.57 m <sup>2</sup> )	
81-100 kg (up to 220 lbs)	7.0 SqFt (0.66 m <sup>2</sup> )	
Adult pig is groups	15.0 SqFt (1.4 m <sup>2</sup> )	Nil
Boars in individual pens	64.0 SqFt (6.0 m <sup>2</sup> )	Nil

## GROUPING PIGS

Sorting of grower pigs by weight and sex can be an efficient way control social behaviour of animals and variation in weight. On average pigs should be placed into groups not larger than 25 pigs per group. Larger group sizes increases competition for feed and water and negatively impacts performance.

- Growers can be sorted by weight, sex, litter or temperament:
- **Sorting by weight** – improved use of space, improve health, reduction in weight variation and improved feed efficiency.
- **Sorting by sex** – males tend to grow faster than females and feed can be more efficiently consumed in split-sex groups.

## FEEDING AND WATERING FACILITIES

Each pig requires adequate access to feed and water. Poor access to feed can produce uneven growth and impairs feed conversion efficiency. If feed troughs are used, the space required per pig ranges from 0.5 ft for pigs

at eight weeks of age to 0.9 ft for grower pig and 1 ft per finisher pig.

It is important to ensure that all pigs have the required space to feed without competition, especially the weaker piglets. The number of pigs per feeder or the trough space per pig primarily affects the availability of feed to the pigs. If there are too few pigs per feeder space, some feeder space may not be used enough to provide fresh feed and the additional feeder space is simply extra cost. If there are too many pigs per feeder space, all pigs may not have enough time to eat what they desire, and competition and fighting increases at the feeder. Because smaller pigs eat slower than larger pigs, feeder space is more often limiting with small pigs.

## TROUGH FEEDER



## CIRCULAR FEEDER



Grower and finisher pigs should be fed NUTRAMIX Pig Grower and Finisher Ration ad libitum (unlimited feed) until slaughter.

- Feed restriction in grower pigs will result in lower market weight at 5-6 months of age.
- Feeding restriction in grower-finisher pig is also known to cause high levels of hunger-driven motivation such as tail and ear biting and increase in activity.
- Fighting and aggressive behaviour also occur after feed has been withheld after a period of time.
- Gastric ulcers is a common condition in pigs that have been off feed for any considerable amount of time (approximately 24hrs).
- If pigs miss one or more feedings in a 24-hour period, they do not compensate for this missed feed intake by over consumption when feed does become available.

Clean, cool and good-quality drinking water must be available at all times. Weaner pigs should be supplied water via the bite-type nipple drinker with one drinker per 6-8 weaners. Growers and finishers should have one nipple drinker per 10-15 pigs, though more drinkers may be necessary in hot environments. As a general rule, a nipple drink should produce no less than 1.5–2 L of water per minute.

**Table 8:** Water requirement of pigs and supply requirement of nipple drinker

	<b>WATER REQUIREMENT (LITRE/PIG/DAY)</b>	<b>NIPPLE DRINKER SUPPLY (LITRES/MINUTE)</b>
<b>Piglets</b>	<b>1-2 L (including</b>	<b>0.5 L/min</b>
<b>Weaners</b>	<b>1-5 L</b>	<b>0.5-1 L/min</b>
<b>Growing pigs at 15-45 kg</b>	<b>5-8 L</b>	<b>0.5-1.5 L/min</b>
<b>Finishing pigs at 45-100 kg</b>	<b>6-10 L</b>	<b>1-3 L/min</b>



# TRANSPORTATION REQUIREMENTS

- Trucks or trailers should be considered as moving barns and thus, must be cleaned as the pig facilities.
- Vehicles should be washed and disinfected between loads. If vehicles are borrowed or rented, care must be taken to clean and disinfect before placing a new set of pigs. A loading ramp should be constructed on your farm to accommodate loading and unloading of animals. The loading ramp should be built in an area where it will be comfortable for animals to embark and disembark.
- Surfaces should not be too smooth as to enable slipping and damage to animals. Ramps should also be disinfected after every use to minimize transmission of pathogens.

## LOADING RAMP FACILITY & TRANSPORT VEHICLE



# HERD HEALTH MANAGEMENT

Knowing what diseases are present in a herd is an important part of any herd health management plan. Knowing what you have is important in selecting management protocols, proper vaccination protocols, timing of vaccines and selection of proper treatments that will be necessary to combat diseases. Conversely, if certain diseases are absent it has implications for screening the purchase of animals.

It is best to purchase replacement animals from a reputable farm where accurate farm records are being kept to make it easier to track any herd health issues that may have arisen through new additions of animals to the farm.

When purchasing new animals. All swine operations should have a small quarantine area attached to the swine facility. This area is used to separately house newly acquired animals at least 2-4 weeks after purchase. This allows for close observation and acclimatization of the new recruits.

# VACCINATION PROTOCOLS

**“An ounce of prevention is worth a pound of cure.”**

**- Benjamin Franklin**

The use of vaccines is to minimise the severity of clinical diseases and to boost the pigs' immune system so that it can fight diseases better. Vaccination programs for each farm is unique and depend on the farm's health status, type of farm (breeding herd, growing, both, etc.) and its location. There are some basic diseases that should be considered for vaccination on every farm, but it is strongly recommended that you consult your **NEWPORT MILLS LTD** Veterinarian or Live-stock Support Specialists for specifics on vaccines and a vaccination programme that optimise your farm's health programme.





# VACCINATION PROTOCOL FOR GROWING PIGS

Vaccination is practiced in breeding sows/gilts to increase the antibody levels in the colostrum for young piglets. Gilts should receive a primary set of vaccines at 5 months of age and then followed with booster vaccines 3-4 weeks later. Sows are vaccinated approximately 2-3 weeks before farrowing.



The new gold standard for  
PCV2 & M hyo protection

The only ready-to-use combination  
vaccine containing PCV2 &  
M hyo antigens



**Table 9: Vaccination Administration**

VACCINE/ PRODUCT	ADMINISTRATION	COMMENTS
<b>MPac Mycoplasma bacterin</b>	4-6 weeks prior to farrowing	Breeding herd respiratory problems, non-pro- ductive coughing
<b>Majectic 7 (PLE) Parvovirus Leptospiro- sis Erysipelas</b>	2-3 weeks prior to farrowing	Breeding herd cause se- vere repro- ductive and systemic disease in breeding herds
<b>PCV2 + MPac Porcine Circovirus + mycoplasma</b>	3 weeks of age	Piglets wasting, slow growth and respira- tory prob- lems
<b>PCV2 + MPac Booster vac- cine</b>	5 weeks of age	Piglets wasting, slow growth and respira- tory prob- lems
<b>Erysipelas</b>	5-7 weeks of age	Piglets sudden death, weak pigs and skin disco- louration

# MEDICATION, TREATMENT AND THERAPY

The use of medications in pigs is for the treatment of sick animals and for the prevention of disease or parasites.

Medicines are specific to the types of pathogens or parasites that they are used to treat. There are specific classes of drugs, such as antibiotics, which work for specific types of bacteria. Therefore it is necessary to know what you are treating for when using different drugs. Sometimes the medication given to the animals fail to work and this may be due to one or more of the following:

- Treatment started too late in the course of the disease
- Disease occurred too rapidly
- Disease is not treatable by antibiotics (viral or non-infectious)
- Treatment is not used for complete duration
- Pig's immune system is not working properly (e.g. stress)
- Selection of the wrong antibiotic, dewormer
- Wrong dose of the drugs used
- Bacterial resistance to the drugs
- Drugs no longer active (expired, improper storage, contamination)

# RULES OF THUMB

- If animals are grouped together, it is good practice to separate or segregate sick animals into a hospital or sick bay area where isolation from healthy animals and additional care can be provided. This will help to slow transmission of diseases to other animals.
- Antibiotics are only given to sick animals and should be administered by the recommendation of a veterinarian. Nursery and grower/finisher pigs should be dewormed every 6-8 weeks or at least twice before slaughter. Every farm will have its own deworming programme.

**Table 10: Drug Administration**  
(On Next Page)



DRUGS	INDICATIONS	ADMINISTRATION	WITHDRAWAL PERIOD
<b>Ivomec/ Ivocip</b>	Internal and external parasites  Broad spectrum	1 ml/75 lbs body weight under the skin  Grower/finisher – at 8 weeks and 16 weeks	18 days
<b>NU-TRA-MIX pig grower with Fenbendazole</b>	Internal parasites  Broad spectrum	Feed to grower pigs for 7 days	0 days
<b>Piperazine</b>	Internal parasites  Narrow spectrum	400 g / 140 L of water Treat all pigs every 30-45 days starting at 10 weeks of age	21 days
<b>Amox-inject LA</b>	Antibiotic – infections especially after farrowing and abscess	3 ml/110 lbs in the muscles for 3 days	28 days
<b>Oxyvet 200LA</b>	Antibiotic – infections, diarrhoea, abscess, respiratory infections, mastitis	1 ml/22 lbs in the muscles every 3 days	21 days

# BIOSECURITY

Biosecurity is a series of management practices with two goals – preventing diseases from entering the operation, and, if one does enter, preventing its spread on the farm or to other farms.

Regardless of the size of the operation, there are some basic components that must be practiced:



- Control movement of animals.
- Control movement of people and equipment coming onto the farm. Clean and disinfect as much as possible.
- Each farm has its own needs and the farmer should determine where risks for the introduction of diseases exist. Biosecurity programmes can change depending on the risks of new emerging diseases entering Jamaica.

Presently, Jamaica is free from all major and reportable pig diseases. This disease free status can only be protected by continued good biosecurity practices and this starts with every farmer.



# GOOD BIOSECURITY PRACTICES

- Practice All-In/All-Out system of farming. All animals entering the facility at the same time are finished and sent to the slaughter at the same time.
- Separate operations into different locations. Keep breeding facilities away from farrowing – the further apart, the better.
- Replacement animals should be purchased from a known area and try not to buy animals from many different areas. Know the disease status of those farms.
- Clean and disinfect all facilities and vehicles before moving animals. Construct a footbath at the entrance to every building.
- Place restrictions on visitors and vehicles entering the facility.
- Quarantine and isolation of all new and sick animals from the rest of the herd.
- Develop a herd health programme, which includes vaccination, deworming and treatment of sick animals.
- All carcasses should be disposed of immediately and properly.
- Practice an annual testing of animals to determine the disease status of your farm.

