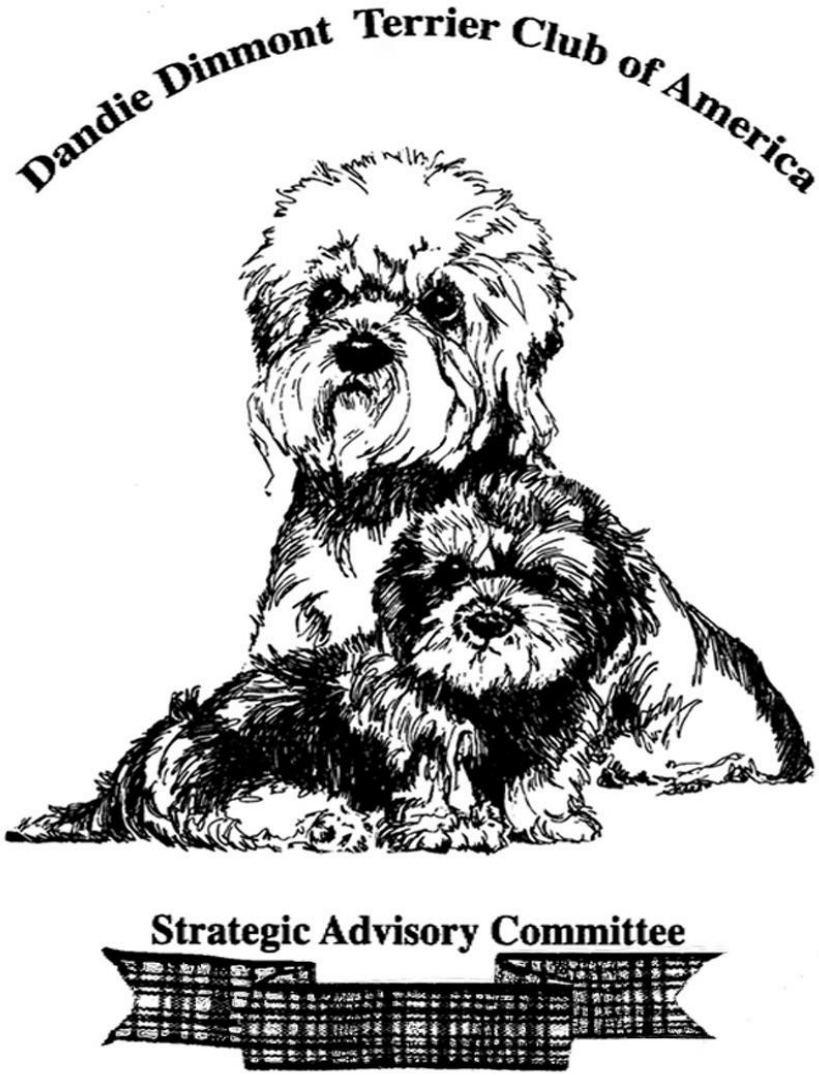
# WHAT YOU NEED TO KNOW

THE PURPOSEFULLY-BRED DOG

KNOWLEDGE MANAGEMENT PROGRAM

# Getting The Bitch Pregnant

**First in a 4-part series of surveys sponsored by**



# Getting the Bitch Pregnant

## Introduction

This report captures the collective knowledge shared by 47 breeders who have produced more than 1,200 litters and put more than 5,000 puppies on the ground. To our knowledge it is the first report of its kind. Our purpose is to preserve the collective wisdom of today's best breeders for generations to come. The survey, sponsored by the Dandie Dinmont Terrier Club of America, attracted some of the best breeders in the world – Dandie and other breeds – people who have dedicated their lives to breeding and have had significant recognition such as multiple Breed and BIS awards from Westminster and other prestigious shows. These experts reside in five countries and represent 23 breeds across all seven AKC groups. Some breeds are vulnerable, some not.

We are happy to share this report with all who participated in our survey and with all AKC-recognized breed clubs in the hope of advancing the science of purposeful dog breeding.

The knowledge collected in this report is meant to elevate the discussions new breeders have with their mentor(s). The survey reveals a high level of agreement among experienced breeders about "*Getting the Bitch Pregnant*." The findings provide significant learning about practices shared by breeding experts and areas of disagreement which may warrant further study.

This survey is the first in a series and focuses only on *Getting the Bitch Pregnant*. Subsequent surveys will deal with subjects such as Selecting the Right Breeding Pair, Managing a Healthy Pregnancy, and Raising a Well-Socialized Litter.

## Index

We have clustered findings into five major categories:



The Addendum and Methodology profiles the survey participants and provides specific information about the survey.

# 2019 International Survey Results

## Section 1: Preparing for Breeding

Selecting Bitches to Breed

The breeders are discerning and committed to producing quality dogs. Not one breeder selected the option that "I breed what I have."

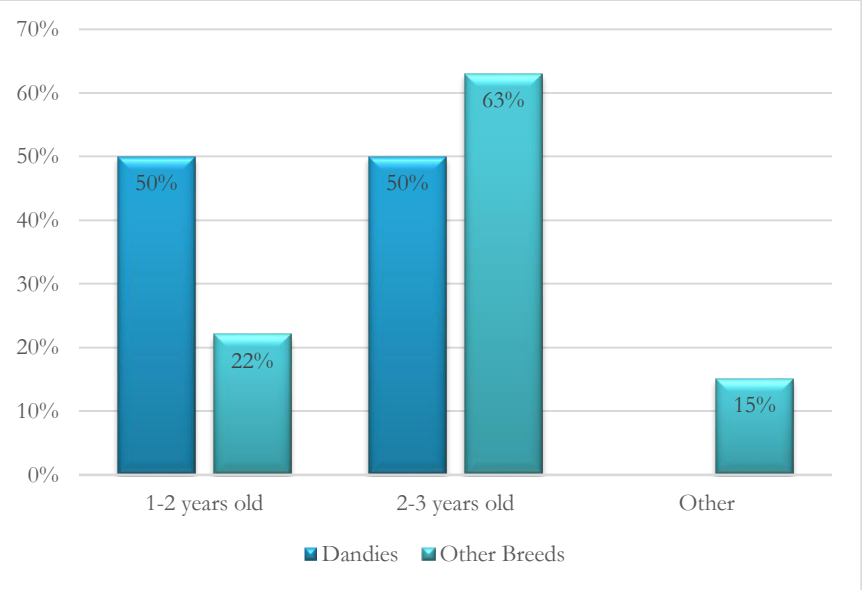
- 77% breed their bitch if they believe she is an excellent representation of the breed standard
- 23% only breed bitches that have been recognized in independent competition

Age at First Breeding

None of the breeders recommend breeding a bitch less than a year old. The majority of them recommend waiting until the bitch is older.

- 57% recommend waiting until the bitch is 2-3 years old
- 34% recommend breeding her when she is 1-2 years old
- 9% recommend "Other"

Dandie breeders vs Other breeders:



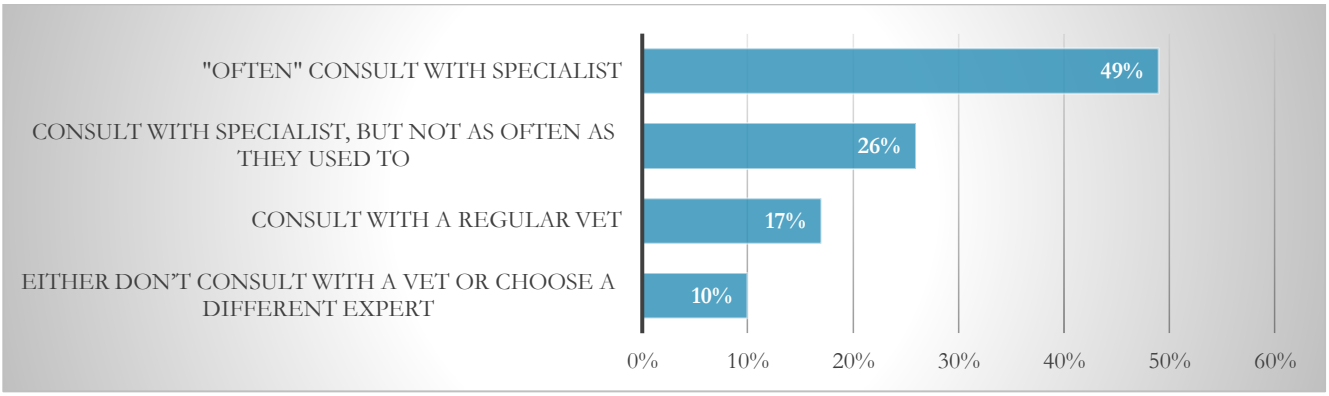

Dandie breeders are split 50/50 about breeding when the bitch is 1-2 years old or waiting until 2-3 years old.

Other breeders recommend breeding more mature bitches.

We assume "Other" means breeding at age 3 or older.

Veterinary Support

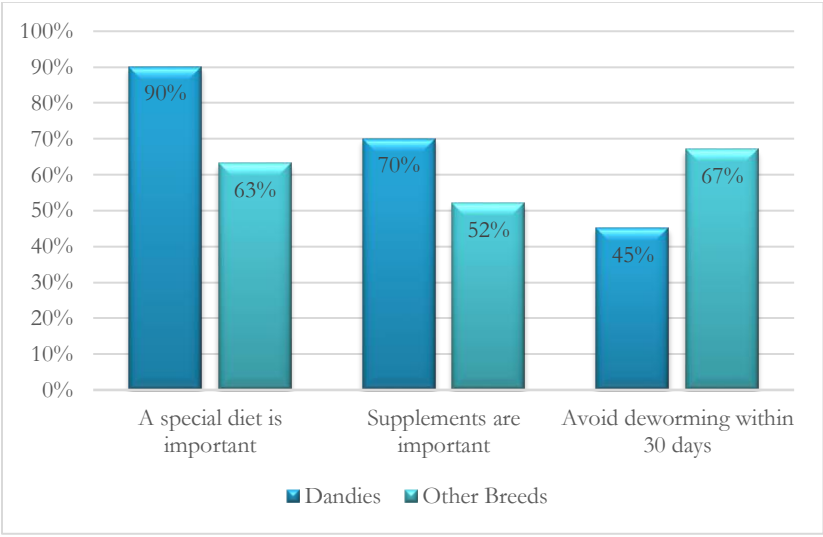
Even though the breeders who participated in this survey are experts on their own, 75% of them consult with a reproduction specialist.




Important Factors

- 100% agree that the age of the bitch at first breeding and her physical fitness for being a mother are either Very Important or Somewhat Important
- 98% agree that the bitch needs to be of proper weight for her breed
- 85% agree that a general health checkup by a vet is important
- 81% agree on the importance of having vaccinations current
- 81% do not use topical flea treatment
- 74% agree that a special diet is important
- 60% believe supplements are important
- 57% avoid de-worming within 30 days of breeding
- 53% avoid giving antibiotics within 30 days prior to the 2nd trimester
- 40% avoid changing medications

There are some differences between what Dandie breeders and Other breeders consider important regarding these 3 subjects:




Except where noted, rankings across breeds and across groups are uniform.

## In Breeders' Own Words

*"Having all relevant health clearances, CHIC or above is crucial prior to starting."*

*"Vaccines up to date and health check at least one month prior."*

*"Vet needs to be knowledgeable about surgical implants."*

*"Having more than one bitch to 'bring the others in' is often helpful."*

*"When bitch first comes in season I put bitch on a vitamin supplement that contains folate. I also give lysine from start of season through to end of puppy weaning as these can help with protecting puppies from canine herpes virus."*

# Section 2: Timing

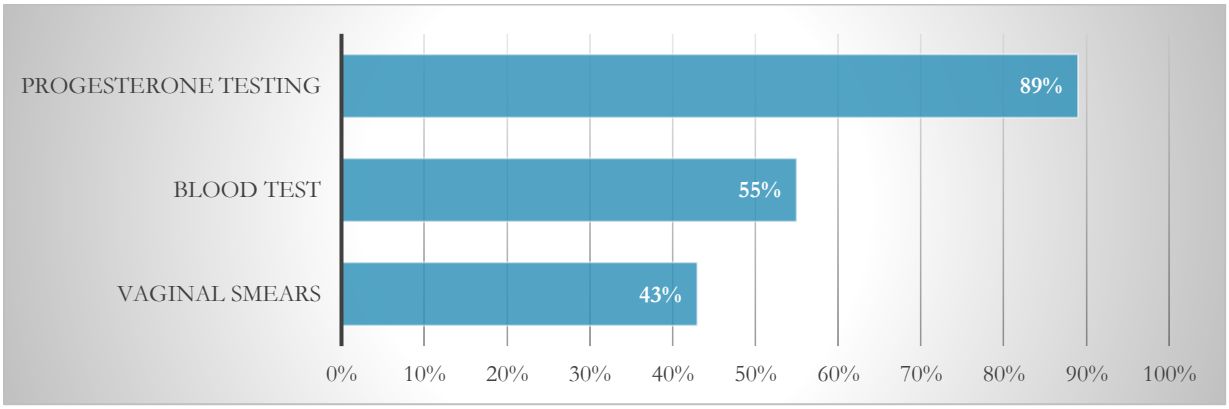
Getting to Know Your Bitch

87% of the breeders keep a calendar that tracks each bitch's previous seasons.
Knowing how consistent your bitch's pattern is will give you confidence about the timing.

62% of the breeders use their personal instincts and observations. Contextually, it was clear that the calendars they keep on their bitch's previous seasons aids breeders' instincts and observations.

Using Clinical Tests

While most breeders have used all clinical tests, Progesterone testing is far and away the preferred test.




- 89% of the breeders use progesterone testing, although they vary in the frequency of use:
  - 19% use it *at first sign* of bitch being in season
  - 62% use it *7 days after first sign* of being in season
  - 32% use it every other day *until the trend is clear*
  - 36% use it every other day *until insemination*
    - Dandie breeders use it every other day until insemination more frequently than Other breeders (50% vs 26%)
  - 17% use baseline tests after breeding
  - 30% use "Other" timing for progesterone testing
    - Note: this is a large percentage to answer "Other" and indicates there is high volatility in the patterns of use. We know of at least one breeder who uses it every day until breeding. Dandie breeders chose this option less frequently than Other breeders (15% vs 41%).

Breeders use other clinical tests at a less frequent rate:

- 55% use a blood test to determine *LH surge* at least some of the time. (32% routinely test for LH surge.)
- 43% use vaginal smears; 57% do not.
  - 22% of those who do use vaginal smears get the test when they see a change in the color of discharge or when they have seen discharge for an unexpected number of days.

- Other breeders get the test when they see a change in the texture of the discharge, heaviness of flow, or other deviations from what is expected.

Physical changes to look for that indicate a bitch is coming into season

100% of the breeders agree that noting physical change is important to getting timing right. Two changes are universally agreed upon:

- 91% look for change in size of the vulva
- 89% look for bloody discharge

Some breeders also look for these changes:

- 38% look for increased peeing
- 36% look for changes in the appearance of nipples, change in attitude re eating, or other behavioral changes

Use of Stud dog in determining timing – "the nose knows" principle

Virtually all of the breeders value the nose of a stud dog, but they differ in how much importance they place on it.

- 57% *strongly* agree that a stud dog's "nose" is useful
- 36% *somewhat* agree that a stud dog's "nose" is useful
  - Of those who found a stud dog's "nose useful, 74% use the dog to *supplement* tests, while 30% rely on the dog *instead of* tests.
- 6% either did not find it useful or the question was not applicable to them
- 49% *strongly* agree that the stud should be the same breed as the bitch, with an additional 4% *somewhat* agreeing with this statement. (53% total)
  - We speculate this finding may be driven by the number of breeders who do natural matings, where obviously the mating pair needs to be the same breed.

### In Breeders' Own Words

*"Check the bitch daily around the time she should be coming in season. Begin initial timing between 5-7 days afterwards."*

*"Have a back-up choice (stud dog) in case first choice is unavailable."*

*"Everything comes down to the timing – breed 72 hours after confirmed ovulation."*

*"Keep thorough notes on prior seasons (bleeding, physical and emotional changes etc). Also on what days the bitch appears to be ready to mate."*

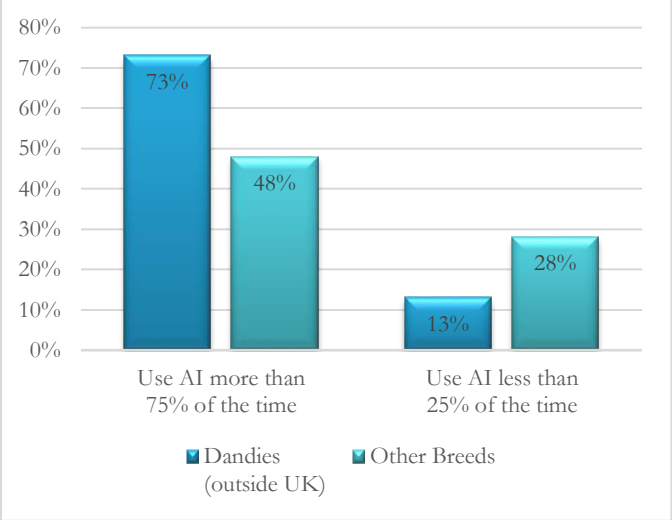
*"Timing is everything and a repro vet MUST be available to perform insemination on THE correct day … not the Friday or Monday closest to the ESTIMATED day."*

# Section 3: Breeding Method and Process

One of the most vexing questions a new breeder faces is whether to do natural breeding vs an Artificial Insemination. (We are using AI to designate any breeding other than natural). We hope the insights provided by our expert breeders will help add clarity to discussions with other breeders and with mentors.

The breeders have had vast experience with all methods of breeding.

- 65% of them have done both natural and AI breedings
- 24% have done only AI breedings
- 11% have done only natural breedings
    - For the most part, UK Dandie breeders have done only natural breedings since The Kennel Club did not sanction Artificial Insemination until a few years ago. 80% of the UK breeders have done only natural breedings.
- Dandie breeders outside of the UK use AI more often than Other breeders




Type of Semen Inseminated

We found no consensus among breeders about what type of semen is used. Our conclusion is that they use the type that is best for any given situation.

- 40% of the breeders say they have inseminated frozen semen the most
- 33% have inseminated fresh semen the most
- 15% have inseminated fresh chilled semen the most
- 13% have inseminated fresh and frozen semen about equally

Dandie breeders use frozen semen significantly more often than Other breeders, 53% vs 32% for Other breeders. Reliance on frozen semen could be due to the distance between Dandies.

Age of Semen used Successfully

The oldest frozen semen successfully used is 21-30 years old. No breeder said they have used semen more than 30 years old.

- 18% of the breeders used frozen semen 21-30 years old
- 23% used frozen semen 16-20 years old
- 25% used frozen semen 11-15 years old
- 25% used frozen semen less than 10 years old

Type of Insemination used

The breeders are evenly distributed in their use of the three types of insemination. Note that we asked them to check all methods they used.

- Surgical implant, 83%
- Vaginal insemination, 80%
- Transcervical insemination, 70%

When asked which method they preferred, the breeders were generous in explaining what they liked about each method. A number of breeders specified that they prefer vaginal insemination when using fresh semen, and TCI or Surgical for frozen.

- 44% preferred TCI.

**In Breeders' Own Words**

*"It puts semen directly into vagina w/o surgery."*

*"I haven't used TCI yet, but will be replacing surgicals for my bitches."*

*"Less invasive" (This reason was given by a number of breeders)."*

*"No anesthesia and as long as the cervix is threaded it puts it right where the surgical implant would but no surgery recovery. It's awesome!"*

*"Goes past the cervix yet no surgery involved."*

*"Semen is delivered directly to the uterus … based on known ovulation date."*

- 27% prefer Vaginal.

Reasons for preferring Vaginal cluster into 3 areas:

*"Easy on the bitch"*

*"Less expensive"*

*"Most successful"*

- 20% prefer Surgical.

> *"Frozen semen surgical implant has given the best results after live cover or side by side with fresh semen."*
>
> *"If frozen or not great quality semen, we do surgical."*
>
> *"100% it is always successful."*
>
> *"The veterinarian can visually inspect the uterus to see if there are any cysts and can abate them at the time of insemination."*
>
> *"Especially when using less than optimal frozen semen."*

- 10% prefer Natural Breedings.

> *"Prefer natural breedings, next fresh extended, then frozen."*
>
> *"Natural best for both conception and size of litter."*
>
> *"None has been as effective as natural breeding."*

Problems using AI

- 75% of the breeders encountered no problems using AI
- Of those who did encounter problems, the problems were:
  - Late shipment of semen
  - Low sperm count
  - Other
- None of the breeders encountered contaminated semen

General Guidance about AI

The breeders agree on the following principles

- 95% - Frozen semen can be inseminated only via surgical implant or TCI
- 95% - Fresh or fresh chilled semen can be inseminated by any of the methods
- 93% - Vaginal insemination can be performed as often as the bitch allows it

They are less definitive about the following:

- 60% - Timing depends on type of semen, not delivery method
- 58% - The viability of frozen semen does not degrade over time (Note than 42% believe that it does degrade over time)
- 55% - TCI or surgical insemination can be done only once during a season (45% believe it can be done more than once)

A larger percentage of Dandie breeders agree that timing depends on type of semen vs delivery method, and that frozen semen does not degrade over time (80% vs less than 50% for Other breeders).

## In Breeders' Own Words

*"Some semen is shipped improperly – where it is in a cargo hold or kept in delivery warehouse or van. Or frozen semen can be improperly thawed. In all cases, this ruins the semen / AI and breeding is unsuccessful. "*

*"I try to avoid breeding in the heat of summer. Heat indices over 95 keep the embryos from implanting. Even if the dogs stay inside, I don't have much luck getting them to settle in the heat."*

*"I'm a huge believer in natural ties. Our preferred method is to breed three times over six days (2 days apart). We have outstanding conception rate and litter size with this method. We also tend to breed 'in house' about 60% of the time."*

*"Find the absolute best Theriogenology vet you can. General practice vets can learn how to do TCI etc but are not experts in looking at smears, feeding thawed sperm to extend their short lifespan and identifying any abnormalities of the bitches' reproductive tract and appearance of viable / sperm."*

*"We always order 2 breedings just in case one is damaged during the thaw (most critical process) and can send the unused one back if it is not needed."*

*"You can use TCI first and follow with surgical but not generally the other way around."*

*"The viability of the semen [frozen] could be just a few hours as opposed to fresh chilled which could be viable for days depending on the semen quality."*

*"You did not ask about using multiple sires. Is that something your breed might be interested in to maximize conception?"* [Ed note: great question. We will follow up.]

# Section 4: Managing Expectations

The objective is to put healthy puppies on the ground that are good representations of the breed standard. Not every breeding produces puppies, and certainly not every breeding produces as many puppies as we would like.

We asked this group of expert breeders how often they have "misses.

- 64% miss less than 10% of the time
- 34% miss 11-25% of the time
- Only 2% miss more than 26% of the time

About two-thirds have a very low "miss" rate – less than 10%. Said a different way, two-thirds of the breeders have a "hit" rate of 90% or better. That is really good. However, it looks a little different when we compared responses from Dandie breeders vs Other breeders.

| *"My bitches miss …* | *Dandies* | *Other Breeds* |
|---|---|---|
| *Less than 10% of the time* | 50% | 74% |
| *11-25% of the time* | 50% | 22% |

Half of the Dandie breeders have a "hit" rate of 90% or better, compared to nearly three-quarters of Other breeders. We have highlighted the differences in practices throughout this report in the hope that it will help explain why Dandie breeders miss more often than Other breeders. We will explore other potentially causal elements in an upcoming survey that deals with selecting a breeding pair.

Success Rate using AI

We asked breeders who have used AI to rate their success using AI methods.

58% rated their success as Excellent (81-100% success)
16% rated success as Very Good (61-80% success)
18% rated success as Good (41-60% success)
8% rated success as Poor (less than 40% success)

Again, we get a slightly different view when we compare Dandies vs Other breeds.

| *Rate your success using AI* | *Dandies* | *Other Breeds* |
|---|---|---|
| *Excellent* | 73% | 48% |
| *Very Good* | 7% | 22% |
| *Good* | 20% | 17% |
| *Poor* | 0% | 13% |

More than half of the Dandie breeders (56%) believe inseminations tend to have higher success rates than natural breedings, whereas only 20% of Other breeders believe this is true.

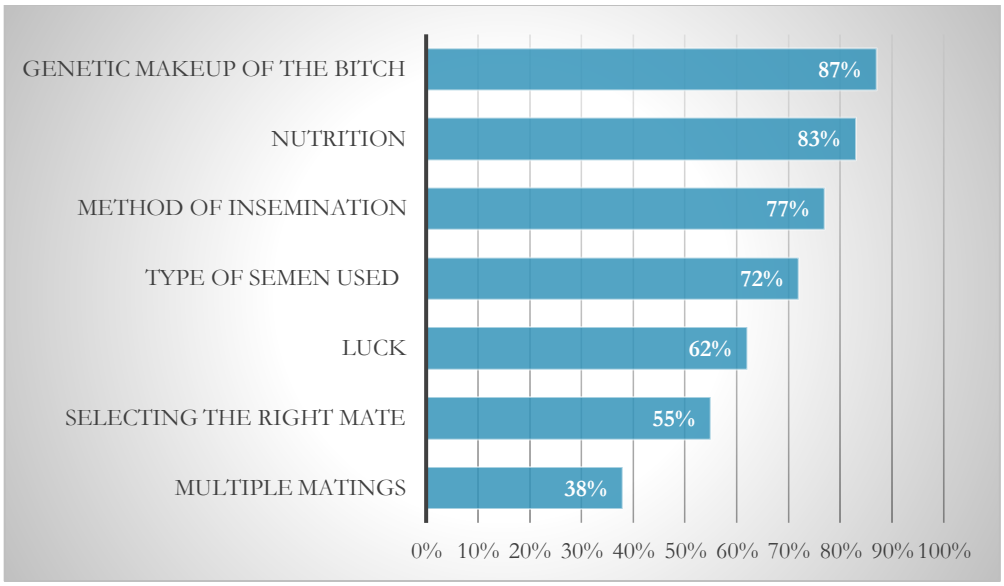
Litter Size

Breeders told us their average litter size and the largest litter they produced:

Dandie breeders: 95% produced average litters of 3-5 puppies
75% produced largest litter of 6-8 puppies

Other breeders: 56% produced average litters of 3-5 puppies
44% produced average litters of 6 or more puppies
63% produced largest litter of 9 or more puppies

*Breeders generally agree these factors contribute to larger litter sizes:*




Did It Take?

After the breeding, take a deep breath and treat your bitch as if she was pregnant. But you won't have indications until 2-3 weeks at the soonest. Breeders told us

- 14-20 days: 16% start to see physically observable indications it "took"
- 21-28 days: 51% used ultrasound and an additional 28% saw physically observable indications
- 29-36 days: An additional 35% did ultrasound and an additional 37% saw physically observable indications
- 37-44 days: This appears to be a week with little change. Fewer than 10% of breeders saw change using any of the indicators
- 45-52 days: 51% used x-ray
- A handful of breeders (less than 5%) used blood tests starting in the 21-28 day period. 93% said that blood tests were not applicable to determining if a breeding "took". 42% said x-ray was not applicable.

Cost to Get a Bitch Pregnant

We asked breeders about the cost just to get the bitch pregnant, not including stud fees or care during pregnancy.

- 47% said $500-$1000
- 35% said $1,001-$2,000
- 16% said$2,001-$3,000
- 2% said 3,001-$4,000

No breeder said higher than $4,000.

## In Breeders' Own Words

*"About $1,000 of the first breeding costs are for health testing clearances. My costs go down to $1800-$2500 after the first breeding."*

*"Using AI is not expensive as I do it myself. Using frozen semen can cost more than $4,000."*

*"I trust bitch's ability to choose male. So even though I had found a very suitable male, and bitch for some reason refuses to be mated (natural mating), I respect bitch's choice. I only allow matings which are very much wanted by both male and female. That has brought excellent results (5 to 8 puppies)."*

*"To determine pregnancy we sometimes use manual palpitation by an experienced veterinarian. Follow with progesterone testing and ultra sound later."*

# Addendum and Methodology

This survey is the first step in creating the Knowledge Management Program for the DDTCA. The marketing world recognizes the value of preserving knowledge acquired by those who gained their knowledge through a lifetime of experience. The DDTCA has adopted this broader perspective, thereby exponentially expanding our concept of a mentoring program.

The number of experienced Dandie breeders worldwide is too small to provide statistically accurate insights. In our quest to find additional experienced breeders, Betty-Anne Stenmark asked for volunteers on her Facebook page. Many highly experienced, expert breeders stepped up. To those, we added a handful of other breeders who have demonstrated their knowledge through decades of consistently high quality breedings. We sent an email invitation to 100 breeders, all of whom have distinguished themselves in the world of the purposefully bred dog. We utilized Survey Monkey's platform to collect survey results.

We received 50 responses - an unusually high return rate that indicates a motivated group of breeders. We rejected three responses because they were not complete. The resulting 47 breeders yielded the goldmine of insights documented in this report. Although small in numbers, the highly select nature of the breeders ensures they represent the broader community of pure-bred dog breeders, particularly those interested in preserving the best in their breeds. (Note: We subsequently learned that having Survey in the Subject line caused some filters to classify the mail as Junk. A mistake we won't repeat.)

Results are generally consistent for both Dandie breeders and Other breeders. The few instances of marked difference are called out through the report.

Here is a snapshot of the Breeders who participated:

| ***Breeders' Characteristics*** | **Survey Results (n=47)** |
|---|---|
| *They reside in five countries, with most respondents in the US* | US 72%<br>Canada 13%<br>UK 11%<br>Australia 2%<br>Finland 2% |
| *They represent all of the AKC breed groups; most breeders focus on one breed* | Dandies: 43% (n=20)<br>Other breeds: 57% (n=27)<br>o Terrier: 6 varieties<br>o Sporting: Spaniel, Pointer, Setter, Retriever<br>o Herding: Corgi, Sheepdog<br>o Hound: Bloodhound, Dachshund, Ridgeback |

- Non-Sporting: Bulldog, Poodle
- Toy: Cavalier King Charles Spaniel
- Working: Siberian Husky

*2/3 of the respondents believe their breed is vulnerable; Other breeders less so than Dandie breeders*

66% believe their breed is vulnerable

- Dandie breeders: 95%
- Other breeders: 44%

*The breeders have collectively bred around 1200 litters (based on the average of each range)*

| Number of litters bred | | MIN | MAX |
|---|---|---|---|
| 5-10 litters: | 9% | 20 | 40 |
| 11-20 litters: | 21% | 110 | 200 |
| 21-30 litters: | 34% | 336 | 480 |
| 31-40 litters: | 9% | 124 | 160 |
| 41 or more liters: | 28% | 533 | 533+ |

*Most breeders produce average litter sizes of 3-5*

*Dandie litters are, on average, smaller than Other breeds*

Average litter size

- 1-2: 0
- 3-5: 72% (Dandies: 95%; Other breeds: 56%)
- 6-8: 21% (Dandies: 5%, Other breeds: 33%)
- 9+: 6% (Dandies: 0; Other breeds: 11%)

Largest litter size

- 1-2: 0
- 3-5: 11%
- 6-8: 49%
- 9 or more: 40%

The DDTCA is committed to Preservation Breeding

*The goal is to breed Dandie Dinmont Terriers*
*that retain the temperament, health and sound movement to*
*become all-around healthy members of families and to*
*successfully compete in the activities that judge the soundness of dogs*

For more information, please contact the
DDTCA Strategic Advisory Committee at
DDTCASurvey@jmoxham.com