**Summary of the artificial insemination process**



Dilute semen

Semen straws

Storage

* Frozen
* Liquid

Test semen

**Visual observation**

* bulling
* tail paint rubbed off
* KaMar heat detector activated
* electronic technologies

Semen placed into the uterus

Collection of semen

Identification of cows in oestrus

Insemination

**Summary of** **Semen collection and artificial insemination**

|  |  |  |
| --- | --- | --- |
| **Stage in process** | **Action carried out** | **Reason why action is important** |
| **Collection of semen** | Semen is collected every 2 to 3 days. Bulls are teased to get rid of seminal fluid and the semen is collected in an artificial vagina | High concentration of sperm |
| **Dilution of semen** | Once semen has been checked for fertility and concentration it is diluted with egg yolk, and antibiotic and dye is added | Several thousand inseminations can be made from one collection |
| **Storage of semen** | Semen can be stored in liquid nitrogen  Semen can be stored fresh and delivered daily to technicians | In liquid nitrogen sperm remain in suspended animation for decades. It can be used out of season and exported.  Lower number of sperm used per straw so more inseminations can be made. |
| **Heat detection** | Heat detection can be visual observation of cows bulling, tail paint rubbed off or kamar heat detector changed colour. | To correctly identity cows in oestrus so that they can be inseminated at the right time for conception |
| **Artificial insemination** | The technician places a gloved arm through the rectum to manipulate the cervix so the pistolet is guided through the cervix to release the semen in the uterus. | Diluted semen needs to be place high in the reproductive tract to increase the chance of the sperm reaching the egg in time for fertilization to take place. |

***Exercise: Artificial Insemination and the Semen Story***

1. *Semen is collected every three days. Explain why?*
2. *Why is semen diluted?*
3. *List the two ways semen is preserved.*
4. *When inseminating a cow, why is it essential for the pistolet to be sterile?*
5. *List the steps involved in inseminating*
6. *In natural mating, where is semen deposited?*
7. *In AI, where is semen deposited and why?*
8. *When checking semen fertility, what do technicians look for?*
9. *Discuss the impact artificial insemination has had on and will continue to have on the dairy industry?*