# **Supplementary S1 Hormone protocols**

**Ovsynch:** Gonadotropin-releasing hormone (GnRH) is used, and followed by the first prostaglandin (PGF2α) at 7 days later. In the intensive hormone program, the second PGF2α is administrated 24 hours after the first PGF2α. GnRH is applied again 56 hours after the first PGF2α, followed by fixed time artificial insemination (FTAI) on day 10 (Wijma et al., 2018).

**PRIDsynch:** PRIDsynch has a similar protocol to Ovsynch, but it adds an additional intravaginal progesterone hormone implant (PRID delta) during the first 7 or 8 days of the protocol (KNMvD, 2020; Wijma et al., 2018)

**Double Ovsynch:** Double Ovsynch is based on the protocol from Santos et al., (2017). GnRH is administered, followed by PGF2α on day 7, and GnRH on day 10, then it follows the same sequence as Ovysynch.

**Prostaglandin (heat induction):** PGF2α is administered, following by artificial insemination if estrus is detected within 7 days after PGF2α (KNMvD, 2020).

GnRH

PGF2α

\*PGF2α

GnRH

FTAI

7d

24 h

32h

16h

D10

**Ovsynch**

GnRH

PGF2α

\*PGF2α

GnRH

FTAI

7d

24 h

32h

16h

D10

**PRIDsynch**

PRID Delta

8d

GnRH

PGF2α

\*PGF2α

GnRH

FTAI

3d

24 h

32h

16h

D27

**Double Ovsynch**

**Prostaglandin (heat induction)**

7d

7d

7d

GnRH

PGF2α

GnRH

PGF2α

AI

Estrus detection   
0-7d

**Figure S1.1** Flowcharts of each hormone protocol (Gonadotropin-releasing hormone : GnRH; prostaglandin : PGF2α; fixed time artificial insemination : FTAI; artificial insemination : AI)

\* PGF2α is administered in case of intensive hormone program.