

## Supplementary Materials (S1): Cattle Pain Management Survey

### Q1 Where is your operation located?

<input type="radio"/> Alabama (1)	<input type="radio"/> Kentucky (18)	<input type="radio"/> Ohio (36)
<input type="radio"/> Alaska (2)	<input type="radio"/> Louisiana (19)	<input type="radio"/> Oklahoma (37)
<input type="radio"/> Arizona (3)	<input type="radio"/> Maine (20)	<input type="radio"/> Oregon (38)
<input type="radio"/> Arkansas (4)	<input type="radio"/> Maryland (21)	<input type="radio"/> Pennsylvania (39)
<input type="radio"/> California (5)	<input type="radio"/> Massachusetts (22)	<input type="radio"/> Puerto Rico (40)
<input type="radio"/> Colorado (6)	<input type="radio"/> Michigan (23)	<input type="radio"/> Rhode Island (41)
<input type="radio"/> Connecticut (7)	<input type="radio"/> Minnesota (24)	<input type="radio"/> South Carolina (42)
<input type="radio"/> Delaware (8)	<input type="radio"/> Mississippi (25)	<input type="radio"/> South Dakota (43)
<input type="radio"/> District of Columbia (9)	<input type="radio"/> Missouri (26)	<input type="radio"/> Tennessee (44)
<input type="radio"/> Florida (10)	<input type="radio"/> Montana (27)	<input type="radio"/> Texas (45)
<input type="radio"/> Georgia (11)	<input type="radio"/> Nebraska (28)	<input type="radio"/> Utah (46)
<input type="radio"/> Hawaii (12)	<input type="radio"/> Nevada (29)	<input type="radio"/> Vermont (47)
<input type="radio"/> Idaho (13)	<input type="radio"/> New Hampshire (30)	<input type="radio"/> Virginia (48)
<input type="radio"/> Illinois (14)	<input type="radio"/> New Jersey (31)	<input type="radio"/> Washington (49)
<input type="radio"/> Indiana (15)	<input type="radio"/> New Mexico (32)	<input type="radio"/> West Virginia (50)
<input type="radio"/> Iowa (16)	<input type="radio"/> New York (33)	<input type="radio"/> Wisconsin (51)
<input type="radio"/> Kansas (17)	<input type="radio"/> North Carolina (34)	<input type="radio"/> Wyoming (52)
	<input type="radio"/> North Dakota (35)	<input type="radio"/> I do not reside in the United States (53)

West: WA (49), OR (38), CA(5), NV(29), UT(46), ID(13), MT(27), WY(52), CO(6)

Southwest: AZ(3), NM(32), TX(45), OK(37),

Midwest: ND(35), SD(43), NE(28), KS(17), MN(24), IA(16), MO(26), WI(51), IL(14), IN(15), MI(23), OH(36)

Southeast: AR(4), LA(19), MS(25), AL(1), TN(44), KY(18), GA(11), FL(10), SC(42), NC(34), WV(50), VA(48), DC(9), MD(21), DE(8)

Northeast: NJ(31), PA(39), RI(41), CT(7), NY(33), MA(22), VT(47), NH(30), ME(20)

### Q2 Are you?

- Male (1)
- Female (2)

### Q3 Which of the following best describes your involvement with the cattle industry? (Select all that apply.)

- Producer (beef or dairy) (3)
- Veterinarian (2)
- Other (please specify): (1) \_\_\_ = Both vet and producer\_\_\_\_\_

### Q7 How old are you?

- Under 20 (1)
- 21 to 30 (2)
- 31 to 40 (3)
- 41 to 50 (4)
- 51 to 60 (5)
- 61 to 70 (6)
- 1 (7)

*Display This Question: If Q3 = Producer (beef or dairy)*

**Q9 What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.**

- Did not complete high school (1)
- High School (2)
- Some College, no degree (3)
- Trade/technical/vocational training (4)
- Associate Degree (5)
- Bachelor's Degree (6)
- Master's Degree (7)
- Professional Degree (JD, MD) (8)
- Doctorate Degree (PhD) (9)

*Display This Question: If Q3 = Veterinarian*

**Q10 When did you graduate from veterinary school?**

- Prior to 1970 (1)
- 1970-1980 (2)
- 1981-1990 (3)
- 1991-2000 (4)
- 2001-2010 (5)
- 2011-2018 (6)

**Q21 Which pain relief drugs (analgesics) do you have knowledge of and feel comfortable using in your operation or practice?  
(Select all that apply.)**

- Lidocaine (1)
- Oral Meloxicam (2)
- Meloxicam Injection (Metacam® Injection) (3)
- Flunixin (e.g. Banamine®) Injection (4)
- Flunixin (e.g. Banamine®) pour-on (5)
- Aspirin (6)
- Phenylbutazone (7)
- Ketoprofen (Anafen® Injection) (8)
- Other (please specify): (9) \_\_\_\_\_
- None of these (10)

**Q25 How important are the following factors in impacting your decision to use an analgesic drug in adult cattle and calves?**

	Not at all important (1)	Slightly important (2)	Moderately important (3)	Very important (4)	Extremely important (5)
FDA Approval status (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost of the drug (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommendation of veterinarian (Producers only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of sedative effect (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Duration of Pain Control/ Analgesic effect of drug (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of administration (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Short Withhold Period (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Animal's ability to feel pain (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improving Safety of the caregiver/ operator (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved production outcomes (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How painful I consider the procedure to be (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time of onset of drug activity (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Request of producer (Veterinarians only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q30 How has your use of analgesics changed in the last 10 years?**

- Increased use (1)
- Stayed the same (2)
- Decreased use (3)

*Display This Question: If Q30 = Increased use*

**Q31 Why has your use of analgesics increased? (Select all that apply.)**

- New evidence of analgesic effectiveness (1)
- Requirement of a quality assurance program (2)
- Decreased prices for analgesics (3)
- Change in your perception of pain in cattle (4)
- Changing farmer or veterinarian attitudes (5)
- Change in practice or operation protocols (6)
- Influence from colleagues/fellow producers (7)
- Mandated by a retailer or packer (8)
- Maintain consumer confidence in livestock production practices (9)
- Cattle that receive analgesia look better than cattle that don't (10)
- Cattle that receive analgesia have improved health and performance (11)

Display This Question: If Q30 = Decreased use

**Q32 Why has your use of analgesics decreased? (Select all that apply.)**

- Currently available analgesic drugs are not effective at reducing pain (1)
- Currently available analgesic drugs are inconvenient to administer (2)
- Currently available analgesic drugs do not last long enough after 1 dose to justify their use (3)
- Currently available analgesic drugs are too expensive (4)
- I do not know the meat and milk withhold periods for the analgesic drugs (5)
- Currently available drugs do not improve health and performance (6)
- I am not comfortable using an analgesic unless it has been approved by FDA (7)

**Q37 Do you consider that your knowledge about recognizing and treating pain in adult cattle and calves is adequate?**

- Yes (1)
- No (2)

**Q38 Where do you feel you have obtained most of your knowledge about recognizing and treating pain in adult cattle and calves? \*\*Remnant adapted**

- FFA/ 4-H training (1)
- College classes (2)
- Journals / articles (3)
- Continuing education (4)
- Personal Experience (5)
- Online training modules (6)
- Commercial literature / data sheets (7)
- Other (please specify): (8) \_\_\_\_\_

Display This Question: If Q3 = Veterinarian

**Q39 Does the type of illness or procedure affect the likelihood of using a specific analgesic drug in the cattle you treat?**

- Yes (1)
- No (2)

Display This Question: If Q39 = No

**Q40 How likely are you to consider using the following analgesic drugs in cattle?**

	Extremely unlikely (1)	Somewhat unlikely (2)	Neither likely nor unlikely (3)	Somewhat likely (4)	Extremely likely (5)
Lidocaine (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oral Meloxicam (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meloxicam Injection (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flunixin (Banamine) Injection (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flunixin (Banamine) pour-on (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aspirin (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Phenylbutazone (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ketoprofen (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify): (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>