### Key Word Index

Numbers following names refer to abstract numbers. A number alone indicates an oral presentation; an M preceding the number indicates a Monday poster and a T indicates a Tuesday poster. Orals are listed first, followed by Monday and Tuesday posters in numeric order.

The Key Word index is created directly and automatically from the submitted abstracts. Efforts have been made to make this index consistent; however, error from author entry contributes to inaccuracies.

<table>
<thead>
<tr>
<th>A</th>
<th></th>
<th>Aflatoxin M₁, M144, M145, T102</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1, 132</td>
<td></td>
<td>age, M233</td>
</tr>
<tr>
<td>A2, 132</td>
<td></td>
<td>age at first calving, 413</td>
</tr>
<tr>
<td>A2 variant, 129</td>
<td></td>
<td>agricultural biofortification, 154, 268</td>
</tr>
<tr>
<td>abomasal infusion, 229, M257</td>
<td></td>
<td>alcohol destabilization of milk proteins, M132</td>
</tr>
<tr>
<td>accelerometer, 144, 241</td>
<td></td>
<td>alfalfa, 75, M166</td>
</tr>
<tr>
<td>accident, M155</td>
<td></td>
<td>alfalfa fibrous residues silage, M171</td>
</tr>
<tr>
<td>acetate, 109</td>
<td></td>
<td>alfalfa silage, T274</td>
</tr>
<tr>
<td>acetoacetate, M76</td>
<td></td>
<td>algae, 474, M324</td>
</tr>
<tr>
<td>N-acetyl-l-methionine, 485, T298</td>
<td></td>
<td>algorithm for proven and young, 167</td>
</tr>
<tr>
<td>acid whey, 470, 471, 473, M5, T98, T99</td>
<td></td>
<td>almond milk, 130</td>
</tr>
<tr>
<td>acid-base status, T281</td>
<td></td>
<td>ω-tocopherol, M126</td>
</tr>
<tr>
<td>acidification, 176</td>
<td></td>
<td>alteration of carbohydrate traits, M315</td>
</tr>
<tr>
<td>acid-induced gels, T94</td>
<td></td>
<td>alternative milk, 130</td>
</tr>
<tr>
<td>acid-insoluble ash, M305</td>
<td></td>
<td>alternative therapy, M28</td>
</tr>
<tr>
<td>acidogenic close-up diet, M193, M194</td>
<td></td>
<td>amino acid, 79, 308, 443, 482, 483, 484, 487, 488, 489, 491, 516, 517, M172, M199, M256, M260, M290, M299, T147, T148, T211, T244, T249, T299</td>
</tr>
<tr>
<td>acidosis, 220, 298, 504, M273</td>
<td></td>
<td>ammonia emissions, 197</td>
</tr>
<tr>
<td>Acinetobacter baumannii, T77</td>
<td></td>
<td>ammonium-lactate, 147</td>
</tr>
<tr>
<td>Acoustic pulse therapy, 161</td>
<td></td>
<td>AMPK, T153</td>
</tr>
<tr>
<td>active learning, 255, 258</td>
<td></td>
<td>amylase, M244, T247</td>
</tr>
<tr>
<td>active-dry yeast, T254</td>
<td></td>
<td>amylobutyric, M242</td>
</tr>
<tr>
<td>activity, 379</td>
<td></td>
<td>anaerobic digestion, 472</td>
</tr>
<tr>
<td>activity monitor, T205</td>
<td></td>
<td>analyses, 11</td>
</tr>
<tr>
<td>activity monitoring, 145</td>
<td></td>
<td>analytics, 121</td>
</tr>
<tr>
<td>acute phase proteins, 350</td>
<td></td>
<td>anethole, T285</td>
</tr>
<tr>
<td>adaptation mechanism, M77</td>
<td></td>
<td>angiotensin I-converting enzyme, 69</td>
</tr>
<tr>
<td>additive, T122</td>
<td></td>
<td>anhydrous lactose, 464</td>
</tr>
<tr>
<td>adipocyte, 110, M18, M192, T174</td>
<td></td>
<td>animal behavior, 140, T179</td>
</tr>
<tr>
<td>adipokine, M18</td>
<td></td>
<td>animal care, 185</td>
</tr>
<tr>
<td>adipose stem cells, 403</td>
<td></td>
<td>animal health economics, 200, M214</td>
</tr>
<tr>
<td>adipose tissue, 88, M188</td>
<td></td>
<td>animal learning, 36</td>
</tr>
<tr>
<td>adipose tissue macrophages, M191</td>
<td></td>
<td>animal welfare, 37, T5</td>
</tr>
<tr>
<td>adiposity, 503</td>
<td></td>
<td>animal-based indicator, 128</td>
</tr>
<tr>
<td>adsorbent, 32, M24</td>
<td></td>
<td>anion, T303</td>
</tr>
<tr>
<td>adulteration, 25</td>
<td></td>
<td>anionic supplement, M195</td>
</tr>
<tr>
<td>aerobic stability, T113</td>
<td></td>
<td>Ankom RF, T233</td>
</tr>
<tr>
<td>affect, 37</td>
<td></td>
<td>antacid, T88</td>
</tr>
<tr>
<td>affective domain, 257</td>
<td></td>
<td>anthocyanin, M231</td>
</tr>
<tr>
<td>aflatoxin, 32, 224, 505, M24, T215</td>
<td></td>
<td>antibiotic, 50, 159, 239</td>
</tr>
<tr>
<td>aflatoxin B₁, M145</td>
<td></td>
<td>antibiotic use, 162</td>
</tr>
<tr>
<td>archaea, 211</td>
<td></td>
<td>antimicrobial, T81</td>
</tr>
<tr>
<td>Arginine, 486</td>
<td></td>
<td>antimicrobial alternatives, T49</td>
</tr>
<tr>
<td>ark oxidant, M231</td>
<td></td>
<td>antimicrobial resistance, 163, 164, M146</td>
</tr>
<tr>
<td>Artemia franciscana, 128</td>
<td></td>
<td>antimicrobial use, 160, 163</td>
</tr>
<tr>
<td>atmosperic cold plasma, M119</td>
<td></td>
<td>apoptosis, 415, M76</td>
</tr>
<tr>
<td>auction market, T36</td>
<td></td>
<td>appetite, T20, T21</td>
</tr>
<tr>
<td>Aurantiochytrium limacina, M264, M265</td>
<td></td>
<td>aptasensor, T102</td>
</tr>
<tr>
<td>automatic dosing, 438</td>
<td></td>
<td>APY algorithm, 169</td>
</tr>
<tr>
<td>artificial insemination, 316, 430</td>
<td></td>
<td>archaea, 211</td>
</tr>
<tr>
<td>artificial sweetener, M323</td>
<td></td>
<td>auction market, T36</td>
</tr>
<tr>
<td>artisan vodka sustainability, 475</td>
<td></td>
<td>atmospheric cold plasma, M119</td>
</tr>
<tr>
<td>astaxanthin, 474</td>
<td></td>
<td>auction market, T36</td>
</tr>
<tr>
<td>atmospheric cold plasma, M119</td>
<td></td>
<td>atmospheric cold plasma, M119</td>
</tr>
<tr>
<td>automator, 12</td>
<td></td>
<td>automated activity monitor, M216</td>
</tr>
<tr>
<td>automated estrus detection, 97</td>
<td></td>
<td>automated heat watch system, 333</td>
</tr>
<tr>
<td>automated milk feeder, 241</td>
<td></td>
<td>automated monitoring system, 432</td>
</tr>
<tr>
<td>automated systems, 120</td>
<td></td>
<td>automated systems, 120</td>
</tr>
<tr>
<td>automatic calf feeder, 241</td>
<td></td>
<td>automatic feeding system, 140</td>
</tr>
<tr>
<td>automatic measurement, M37</td>
<td></td>
<td>automatic milking system (AMS), 118, 451</td>
</tr>
<tr>
<td>automatic monitoring, 207</td>
<td></td>
<td>automatic monitoring, 207</td>
</tr>
<tr>
<td>automatization, 122</td>
<td></td>
<td>autophagy, 358, 415</td>
</tr>
<tr>
<td>autoweighing, 207</td>
<td></td>
<td>autoweighing, 207</td>
</tr>
<tr>
<td>autoczygosity, 460</td>
<td></td>
<td>autoweighing, 207</td>
</tr>
</tbody>
</table>
B

Bacillus, M8, M114

Bacillus sp., T83

Bacillus subtilis, 346

bacteria, 89, 211, T269

bacterial count, M203

bacterial population, T273

bacterial surface protein, M66

bactofugation, 401

barley, T216, T295

barn type, M215

Bayesian, 198

Bayesian calibration, 208

Bayesian regression, M208

BCS, 28, 96, M220, T18, T193

bedding material, M203

behavior, 92, 139, 142, 143, 244, 343, 369, 371, M43, M46, M51, M52, M54

celling, M224

benchmarking, 301

β-carotene, T302

β-casein, 129, M100

β-glucan, M127

β-hydroxybutyrate, 148, T283

β-hydroxybutyric acid (BHB), M9, T266

β-lactam antibiotic, M107

β-lactoglobulin, T89

betaine, M249, T241

beverage, 286

BHB, M9, T266

bile acids, 86

binder, M245

bioactive, 34, T293

bioactive compound, M120

bioactive extract, T270

bioactive nutrient, S21, M12, T121

bioactive peptide, 79

bioactivity, 279

bioavailability, 35, 191, 517, M302

biochemistry, T82

bioenergetic, M304

bioinformatics, T146

biological activity of milk, 194

biomass and environment, M53

bio-protective culture, T76

biopsy, T170

blackberry pomace, T54

blood metabolite, M301

blood metabolites, 220, 338

blood parameter, M86

blood plasma, M260

blood urea nitrogen, 505, T198

BLUP, M21

body composition, 249

body condition, 114

body condition score, 28, 96, M220, T18, T193

body length, 444

body measurement comparison, M30

body reserves, M183

body weight, 96, 201, T55, T137

bone, 404

Bos indicus, 335, M54

Bos taurus, M54

bovine, 418, 428, 478, M235, T50, T174, T206

bovine mammary epithelial cell, 414, M174, T153

bovine mastitis, 305, M66

bovine milk, 399, T93

bovine PCR, 385

bovine plasma, M310

bovine respiratory disease (BRD), M103, M327

bovine rumen, T23

bovine rumen epithelial cells, 424

bovine tuberculosis, 447, 448

branched-chain α-keto acid dehydrogenase (BCKDH), 84

branched-chain amino acids, 81, 238

brassica, T264

butter, 25

butyrate, 109, 135

butyrate infusion, M229

bypass carbohydrates, 502

by-product, 473, 509, M320, T189, T221


calf comfort, T13

calf diarrhea, T48, T49

calf health, 312, T44

calf mammary parenchyma, T165

calf management, 201, M150, T44

calf nutrition, 262, T135, T263

calf performance, M310, T41, T42, T43

calf starter, M266, T132, T133, T139

California, M164

calving, 232, 369, T137

calving assistance, 41

calving location, T12

calving pattern, 322, 323

calving transition, 33, T275

camelina co-product, M287

cannulation, T232

canola meal, M285, T229

caprine cheese, T68

capsicum, M323

carbohydrate, 493, M244

carbon footprint, 184

carbonated drinkable cheese, T80

career, 260

carina meal, 30, 436, 437, M277

carvado, T285

casein, 406, 457, 463, M126, M127, T266

casein hydrolysate, 158

casein synthesis, M172

casein-based gel, 175

cattle, 138, 337, 433, M311

cattle transport, T36

causal inference, T305

cavitation, 467

ceftiofur, T24

cell cycle, 414, M144, M149

cell walls, 186

cellulose, 186

central nervous system, M199

Centrosema pubescens, M169

ceramic membranes, 16

ceramide, 31, 110, 500, M275, M279, T234

cereal grains, T295

CH4 emission, M306

challenge, M60

challenge model, T35

Chanco cheese, T67
Cheddar, 180, 182
cheese, 178, 179, T62, T66, T69, T73, T74, T75
cheese ripening, 20
cheese yield, 174
chemical composition, T121, T238
chemometrics, 24
chewing activity, M294
China, M146
Chinese Holstein cow, M234
chitosan, 214
chitosan microparticles, M65
choline, 78, 221, 294, 319, 381, M272
Cholistani, T60
chop length, 341, 343
chromatography, M292
chymosin coagulation, 283
cinnamaldehyde, T48
cinnamon, T81
circadian clock, 419
circadian rhythm, 480
claw anatomy, T197
clay minerals, 376
climate change, 54
clinical ketosis, M9
clinical mastitis, T178, T254, T294
color, M2, T70
color Doppler, T173
colostrum, 47, 294, M17, M35, M70, T175
colostrum production, 99
colostrum replacer, T134
comfort, 367
commercial dairy system, T118
comparative slaughter, 249
composition, M141
compost bedded barn, T192
compost bedded pack, M203
computer software, 184
computer vision, M209
concentrated milk, 407, M108
condensed whey solubles, 439
confocal microscopy, T92
conjugated fatty acid, 418
continuous culture, T292
control chart, M142
controlled-release urea, M263
co-occurrence network, 375
cooling, 91, M210
cooperative extension, M154
coordinated behavioral activity, M53
corn, 345, T216
corn planting density, T110
corn silage, 72, M159, M160, M167, M230, M231, T108, T110, T111, T112, T271, T274
corn silage hybrids, 73
corn stalks, 509
corn stover, T288
Cornell model, 515
corpus luteum, 315, T170, T173
correlation, M55
cortisol, 42, 369, M10, M176
count, T80
course design, 257
covariance functions, 151
cow, 355, 382, 458, T188, T289
cow behavior, 368
cow breast, T274
cow comfort, 245, M215, T9, T53
cow feeding program, T120
cow health, T53
cow milk, T67
cow welfare, 373, T7
cowpea polyphenols, T23
cow-side diagnostic, M83
cow-side meter, T190
CP degradation in situ, T276
creatinine, M236
CRISPR/Cas9, M173
crop residue, 509, M46
crossbred, M211
crossbred dairy cow, M237
crossbreeding, 388, 389, 390, 396
cross-validation, 392
crude protein, 497
cryopreservation, 496
crystal, 178
crystals, 179
culled cow, 266, T36
culling, 329, M88
cultured dairy products, T79
cup plant, T243
curd syneresis, 176
cure rate, M181
cutting height, 74
cytokine, M70
daily milk yield, M94
daily urine output, M225
dairy animal, M100
dairy cattle, 35, 148, 166, 209, 210, 370, 517, M85, M86, M89, M219, M241, T11, T176, T201, T271, T303, T304, T305
dairy cattle feeding, T124
dairy coproduct, M133, T84
dairy cow health, 153, M90
dairy cow with mild fatty liver, M77
dairy economics, 118
dairy efficiency, 485
dairy ewe, 247, 248, 250
dairy farmers, 15
dairy goat, 123, 252, 253, T17
dairy heifer, 30, 276, 334, 413, 436, 437, M277, T127
dairy herd improvement, 373
dairy industry, 195
dairy processing, M139
dairy producer, 185
dairy product, M120, T96
dairy protein, 286
dairy protein ingredient, 281
dairy sheep, 106, 127
dairy small ruminant, 128
dairy worker, M153
dam-calf, 237
data, 121
data integration, 320, 326
DCAD, 88, 219, 246, 499, M80, M308, T45, T46, T281, T296
dec novo fatty acids, 461, 465
decision support, 200
decision support systems, 320
decision-making, 121, 326
deep learning, 330
degradability, T125
degradability in vitro, M170
dehorning, M10
deoxynivalenol, 48
detection, T105
development, M48
DHA, M243, M264
DHL, 325
diagnostic procedures, 446
diarrhea, 136, M301, M327
diet, 216
diet accuracy, 100
diet starch, 501
dietary buffer, T219
dietary cation-anion difference, 88, 219, 246, 499, M80, M308, T45, T46, T281, T296
dietary starch, 33, T275
dietary transition, M44
different factors, M234
differential somatic cell count, 60, 325
digestion, 11, 193, 412, T246, T251
digital dermatitis, 59, 368, 380
dimensionality, 169
dipeptidyl-peptidase IV inhibitor, T90
direct genomic value, 167
direct-fed microbial, 261, 355, M282, T42, T43
disappearance rate, M293
disbudding, 38, 371, M52
disease, 240, M220
disease resistance, 58
displacement, T127
distillers grains, M255
DM analysis, T191
DMI, M238, M248, T281
DNA methylation, 308, M20
docosahexaenoic acid (DHA), M243, M264
double cropping, M13
Double-Ovsynch, M217
dried distillers grains with solubles, M240, T242
drug resistance, T77
dry cow, 26, M64
dry matter, T108, T122
dry matter digestibility, M168
dry matter intake, M238, M248, T281
dry off, M44, M196, T33, T185, T186
dry period, M181, T278
dry period length, M151
dry treatment, 158
drying kinetics, 409
dual-energy x-ray absorptiometry (DEXA), 404
duodenal appearance, T298
dynamic, 1
dynamic feeding, 140
dynamic value forecasting, 321

e
early experience, M45
early lactation, 133, 327, 501
early pregnancy, T171
early separation, 237
early weaning, M313
Echinochloa utilis, T123
economics, M210
ecosystem, 53
education, 362
effect size, M285
effective ruminal disappearance, M293
efficiency, 55, 487, T226, T228, T229
egg antibody, T41
electric blanket, T188
electrical conductivity, 45
electrical resistance, T176, T177
electronic analysis, T86
electrophoresis, M125
embryo, 331
embryo development, 104
embryo transfer, T172, T205
embryonic development, 278
emission-excitation matrix, 18
emissions, 53
emotion, 36
employability skills, 257
empty body weight, 28
doncoid, 83
dendogenous pool, M262
dendometrium, 104, T31
endomicrobial supplement, M300, T262
energetic efficiency, 342
energy, 328, 412, M240, M320, T139, T301
energy balance, 82, 86, M183, T37
energy density, M43
energy expenditure, T294
energy metabolism, M251
energy status, T261
energy supplementation, 250
energy utilization, T221
enrichment, 37, 218, 244, M47, M49
enrichment analysis, 57
ensilability index, M161
entanglement, 284, M155
enteric methane, 210

Enterococcus, M111
enterolactone, M284
Enterolobium cyclocarpum, T297
enthalpy, M250
environment, 55, 91, 187, M206
environmental sustainability, 215
enzyme, 89, 354, M304
dynamic feeding immunity, T106
enzyme expression, M233
enzyme immune assay, T206
epidemiology, M91, M182
epigentic, T167
epithelial cells, T26
equation, M205
Escherichia coli, M28
Escherichia coli O157:H7 shedding, 227
essential amino acids, 492, T226
essential fatty acids, T130, T289
essential oil, 212, T248
estrogen, T165
estrus, M56, M221, T161, T205
estrus intensity, M216
evaluation, 3
ewes, 254
exercise yard, T5
exopolysaccharide, 19
exosome, 191
exotic fruit, T85
expansins, 347, 348
experiential, M325
extension, 361, M152
extruded flaxseed, T265
extruded soybean meal, 510
extrusion, 175

f
faba bean, T276
FABP4, M192
facilities, 366
FARM, 185
farm management, 320, 399, 449
fat, M255
fat globules, 193
fat supplement, T154, T255
fat supplementation, 108, 114
fatty acid, 115, 126, M34, M88, M197, M208, M286, M297, T238, T251, T257, T286
fatty acid composition, T227
fatty acid metabolism, 113
fatty acid profile, 205
fatty acid supplement, 116, M250
fatty acid supply, T289
fatty liver, 149, M50
fecal microbiome, M60
fecal pathogen, T14
fecal pH, 299
fecal RNA, T40
feces, T59
feed, T227
feed additive, T248
feed availability, M15
feed bunk refusals, T180
feed conversion, 215, T180
feed cost, M13
feed efficiency, 337, 387, 389, 392, 393, M271, T59, T184, T215, T219
feed efficiency and adaptive capacity, M312
feed form, M314
feed intake, 134, 356, 388
feed location, 300
feed preference, 440, M45
feed production, 196
feed restriction, 78, M232
feed sorting, 231, M44
feedbunk stocking rate, T127
feeding, M204
feeding behavior, 145, 338, M232, T14, T260
feeding costs, 100
feeding efficiency, 349
feeding pattern, M227
feeding rate, T143
feeding strategy, 243, T213
feeling, 36
fermentation, 288, M167, T249
fermentation quality, M171
fermented foods, T79
fermented milk, T85
fermented milk product, 466
fermentor, T252
fertility, 64, 273, 274, 278, 316, T47, T155, T207, T210, T304
fetal programming, 252, 310, 476
fever, M61, T21
fiber, 189, 217, M159, M320, T114, T242
fiber degradation, T271
fiber digestibility, 74, 188, 349, M278
fibrolytic, M242
fibrolytic enzyme, 347, 348, 349, M22, T126
filterability, 471
firmness, T70
first lactation, 435
fish oil, 125, 126, T225
flavor, 288, 470, T100
flavored premix, M42
flax oil, 46, 442
flaxseed, M124, M274
flaxseed meal, M284
flowability, M105
flow-aid, M106
fluid milk, M116
fluorescence, M8
fluorescence spectroscopy, 24, M138
fluorescent, T102
fluorescent proteins, 319
fly count, 236
foliar fungicide, M158
food composition, T96
food entainment, 480
foot trim, M222
forage, 187, M166, T114, T124, T191, T223, T259
forage mass, T116
forages, 188, T233
force of pulling, 41
fortified milk, M131
forward osmosis, 17, 407
Fourier transform infrared (FTIR), 25, 205, M141
fraction, M125
fraud, 462
free range, T5
freestall, 372, T2, T6
freestall barn, 197
freezing point, M141
frequency of diet delivery, M306, M307
fresh cow, M92
fresh legumes, 206
front-face fluorescence spectroscopy (FFFS), M1
fructose, M238
FT4 rheometer, M140
FTIR, 25, 205, 462, M141
FTIR phenotyping, 174
fully acidified close-up diet, 95, M81
fumonisin, 48, T22
functional ingredients, T85
functional trait, M98
functionality, 177, 285
funding, 7, 363
fungicide, M159, M270
furosine, M147, M148
G
G7G-Ovsynch, 98
gait, 264
galactin, M23, M25, M72, M321, T50
gangliosides, T92
gas production, M303
gastrointestinal tract, T277
gelation, T95
gene expression, 93, 113, 234, 295, 398, M296, T255
gene mapping, 64
gene set analysis, 65
genetic correlation, 62
genetic regulation, 303
genetic selection, 394
genetics, 60, 63, 173, 391, 393, 456
genome-wide association study (GWAS), 276, M75, M103
genomic(s), 170, 277, 289, 450, 452, T207
genomic evaluation, 58, 171
genomic inbreeding, 460
genomic MACE, 172
genomic prediction, 168, 387, M96
genomic relationship, T58
genomic selection, 165, 169, 174
geometric morphometrics, 395
Gliricidia sepium, M169
global learning, 258
glucagon-like peptide 1 (GLP-1), M17, T270
glucagon-like peptide 2 (GLP-2), M27, M229
glucose, 88, 137, M84, M197, M198, T163, T169, T190
glucose utilization, 222
glucose-insulin, T30
glucosinolate, T264
glutathione, 309
glycerol, 251, T245
glycogen, M197, M198
glycomacropeptide, T90
GnRH, M217
goat, 124, M321, M324
goat mammary epithelial cells (GMEC), M173
goat mastitis, 479
goat milk, 125, 126, M107, T67
goat milk yogurt, M134
goat type, 249
goaty flavor, M134
Greek style yogurt, 281, T99
Greek yogurt, T95, T98
Greek-style yogurt acid whey, 17
greenhouse gas, 195, 196, 215, M304
greenhouse gas emissions, 184
intravenous glucose tolerance tests (IVGTT), T169
intravital microscopy, 190
investment, 173
involution, M74
ionized calcium, M81
ionophore, T268
iron fortification, T68

J
Jersey, M99, M157, M207, T197
journal submission, 14

K
kernel processing, 344
ketone bodies, M83
ketosis, 56, 147, 148, 153, 502, M90, T151, T156, T158, T193
ketotic cows, M76
Klebsiella, T24
knowledge transfer, M150

L
laboratory pasteurization count (LPC), M36
lactase, T88
d-lactate, T282
lactating, 147
lactating cow, M230, T172
lactation, 68, 87, 356, 426, 480, 481, 486, M38, M259, M314, T147, T149, T254
lactation biology, M180
lactation performance, T212, T247
lactation prediction, 450
lactation shape, 395
lactation stage, T164
lactic acid, M270
lactic acid bacteria, 292, M120, M122, T77
lactic acid bacteria adherence, 402
Lactipro, 261
lactobacilli, T73, T75, T76
Lactobacillus, T74
Lactobacillus buchneri, 227, M165, T112, M113
Lactobacillus bulgaricus, T78
Lactobacillus helveticus, 69
Lactobacillus hilgardii, M165, T112
Lactobacillus paracasei, M121
Lactobacillus plantarum, M309
Lactobacillus rhamnosus, M121
Lactococcus lactis, T80, T81
lactoferrin, T48, T49
lactoperoxidase, T106
lactase oxidase, T72
lactose-rich coproduct, M138
lamb, M42, M313, M323
lameness, 152, 264, 272, 364, 372, M213, M214, M222, T2, T3, T8
landscape genetics, M322
large-scale dairy farm, 44
late gas defect, T73, T74, T76
late lactation, 351, T218
Latin o employees, M153
LC-MS/MS, 457, M128
leguminous silage, T122, T237
leucine, T231
leukocyte, T18, T268
lifetime management, 326
liftover, 168
light intensity, 468
lignin, 74
linear score, 49
linear type trait, M96
linseed oil supplementation, T261
lipid, 478
lipid metabolism, 352, 418, M180
lipid mobilization, M18
lipid peroxidation, M297
lipid synthesis, T153
lipoxygenase, 503, M276
lipogenesis, M189
lipolysis, 423, M122, M188, M189, M319
lipolytic activity, M183
lipo polysaccharide, 420, 421, M23, T159
lipoprotein, 85, M291, M292
liposomes, 469
liquid milk, M148
listeria, 22
Listeria, 291, M117
Listeria innocua, M119
Listeria monocytogenes, 397, M118
liver, 310, 506, T250
liver enzymes, M245
liver lipid, T157
liver TAG, T287
loci, 276
logistic regression, 327
longitudinal observational study, 377
losses, M211
low-heat nonfat dry milk, T94
low-input dairy, 97
LPS, 420, 421, M23, T159
LPS binding protein (LBP), T46
luteal blood flow, 335, T173
luteolysis, M185, T208
lying behavior, T3, T4, T10
lying time, 41, 245, M56, M89, T11
lysine/methionine, M258
lyso phospholipid, T217, T273

M
M1/M2 macrophages, T209
machine learning, 157, 327, 365
macronutrient, 411
magnesium, T291
magnetic nanoparticles, 218
maintenance, 342, T236
MALDI-TOF (matrix-assisted laser desorption/ionization time-of-flight), 43
male calf/calves, 47, 270
mammalian pregnancy, 101
mammary, T151
mammary development, 410
mammary gland, 304, 419, 487
mammary gland health, 303
mammary growth, 26, M64, T152
mammary metabolism, T183
mammary microstructure, 476
management, 119, 122, 452, M157, T185, T186
management practices, M212
manure, 472, M306
manuscript, 14
marker vaccine, M58
Markov chain model, 321
mastitis, 26, 27, 43, 45, 49, 56, 60, 158, 159, 304, 307, M28, M57, M64, M73, M97, M152, M175, M212, T17, T34, T52, T201, T202
mastitis pathogen, 164
maternal fatty acid supply, T130, T131
maternal recognition, T171
mathematical model, 1, 2
maturity, M161, M303
maturity effect, 62
meat quality, 199
mechanical brush, 142
mechanistic model, 491
mechanistic modeling, 208
mechanistic target of rapamycin (mTOR), 482, 489, 494, 516, T148
mechanistic target of rapamycin complex 1 (mTORC1), 478
melatonin, 254
melexicam, 42
meltability, M105
melting point, M250

J. Dairy Sci. Vol. 101, Suppl. 2
membrane, 192
membrane lipid, 21
membrane processing, 18
meta-analysis, 6, 115, 198, 199, M19, M223, M317, T235, T286
metabolic inflammation, M69
metabolic profile, 30, M82, M277
metabolic rate, 426
metabolic status, 82
metabolic stress, 312, M74
metabolism, 78, 80, 248, T250, T278
metabolite, M39, T155
metabolizable AA supply, T212
metabolizable protein, 357
metabolomics, 79, 318, 459, 479, T166
methane, 212, M204, M205, M307
methane emission, 243
methane inhibitors, 243
methane production, M201
methanogenic, 214
methionine, 311, 477, M23, M235, M256, M260, M272, T204, T231, T244
method, 429, T224
method performance, 464
methyl donor, M259
methylation, T167
metritis, 56, M63, T31, T45, T47, T52, T172
MIC, T24
micellar casein, M6
micellar casein concentrate (MCC), 176, 282, M4, M7
micro- and nano-bubbles, 408, M7
microbial, 494
microbial inoculant, M167
microbial protein, 493
microbiology, T82
microbiome, 68, 224, M31, M267, M300, T23, T203
microbiota, 204, 311, T39
microencapsulation, M118
microfiltration, 16, 177, 282, 285, 463, M6
microflora, 399, M147
microfluidization, 283
microorganisms, T201, T202
microscopy, 178
microstructure, 408, M130
mid-infrared (MIR), 124, 393, 463
mid-infrared spectroscopy, 151, 330
milk, 91, 106, 124, 132, 283, 403, 404, 405, 468, 486, M2, M31, M72, M111, M113, M147, M149, T101, T105, T106, T235
milk component, M249
milk composition, 151, M143, M290, T55, T149
milk consumption, 201
milk fat, 70, 115, 461, 465, M294, T156, T222, T230, T238, T265
milk fat depression, M267, T222
milk fat globule, 192
milk fat globule membrane (MFGM), 193, 194, 469, T91, T92
milk fat synthesis, 109, 253
milk fatty acid, 341, 504, M93, T149, T183
milk fatty acid composition, M274
milk fatty acid profile, 116, M324
milk fever, 246, T193
milk genomics, 477
milk leakage, M182
milk lipid globules, 190
milk microbiota, T83
milk phospholipid, 194, 402, 469, M122, M129
milk pregnancy-associated glycoproteins (PAG), 98
milk preservation, T86
milk processability, T218
milk processing, 131
milk production recording programs, 449
milk protein, 279, 357, 492, M40, M235, M252, M253, T117, T146, T231
milk protein synthesis, 483, T226
milk proteomics, M179, T87
milk quality, 156, 324, T181
milk recording, 451
milk replacer, 416, 435, 443, M310, T41, T42, T43, T138, T211
milk replacer supplementation, T187
milk serum protein, M125
milk spectral data, M208
milk synthesis, 417, T154
milk true protein, 461, 465
milk urea nitrogen, M234, M252
milk weight, T150
milk yield, 81, 133, 410, M22, M98, M215, M283, M318, T137, T180, T195, T196, T230, T237
milk yield variation, M94
milk-based beverage, M310
milk feeding, 119
milk feeding frequency, 82, 133, 153, M90, T195, T196
milk feeding machine, 123
mineral, M87
mineral mixture, M268
mineral status, M280
mini-silo, M170
mitochondria, 87, 293, 358
mitochondrial function, M77
mixed pasture, T117
model, 3, 52, 96, 492, T128, T227
model evaluation, T246
model performance, 4
modelling, 4, 7, 11, 233, 339, T236
molasses, M246, M247, T121
molecular analysis, M111, T83
molecular marker, M95, T60
molecular spectroscopy, M316
monensin, 508, M251, T279
morbidity, 270
movement opportunity, 146
Mozzarella, 180, M106, T66
mTOR, 482, 489, 494, 516, T148
Mucuna pruriens, M169
multiple correspondence analysis, M212
MUN, M234, M252
muscle, 80
mycotoxin, 48, 77, M245, M283, M318, T103
myoepithelial cell, 416

N

N use efficiency, 206
n-3, T164
nanofibers, 284
NanoString, T31
nanostructure, M130
national dairy database, 373
natural additives, M202
natural colorant, M5
2-NBDG, 222
NDF, T224, T263
NDF digestibility, 444, M11, T252
near- and mid-infrared wavelength selection, M316
near-infrared, T108
near-infrared spectroscopy, M82
Nedap Smarttag Neck, M55
needs assessment, M154
negative energy balance, 139, 498, M92
neonatal diarrhea, T32
neonatal glucose status, T131
net energy, M271
net present value, 321
neuroendocrine, 431
neutralizing antibody response, M58
neutrophil, T160
neutrophil function, M200
newborn, 39, 40
nitrogen efficiency, 233
nitrogen metabolism, T299
nitrogen rate, T124
nitrogen utilization, M253, T212, T217
3-nitrooxypropanol, 209, 210, M241
non-\textit{aureus} staphylococci, 163
nonesterified fatty acids (NEFA), 428, M93, T198
non-fiber carbohydrate, M309
non-linear models, M21
nonlinear, 198, 512
nonthermal, 406
nonthermal concentration, 407
NorFor, 515
normalization, 429
novel forage, T243
novel phenotype, 274
NSAID, T167
nutrient, M206
nutrient degradability, M296
nutrient excretion, T279
nutrient flow, M22
nutrient-sensing kinase, 422
NutriTek, T259
nutrition, 6, 7, 119, 195, 301, 459, M228, T179, T294
nutrition system, T236
nutritional composition, M163
Nutritional Dynamics System, 515
nutritional grouping, 100
nutritional immunology, 507, M12

O
oat, 351, M233
obesity, 403, 405
ODE model, T30
oil releasing extent, T277
oleic acid, 107, 108, 230
oligosaccharides, 68
olive oil, 113
omics, 455, 458
OmniGen-AF, T34, T194
one-carbon metabolism, M259
on-farm culture, M152
oocyte, 295, 360
operant conditioning, T15
optimal contribution, 165
oral inoculation, M288
oregano, T29
organ size, T152

P
packaging, 468
pain, 38, 42
pair housing, M50
Pakistan, M100
palatability, M241
palmitic acid, 107, 111, 205, 230, M275, M279, T265
palmitic fatty acid, T252
paraoxonase (PON), 313
paris, T33
parity, 62, M151, T12
partial least square regression (PLSR), M1
partial mixed ration, 338
particle size, 336, M298, T267
passion fruit, T125
passive transfer, 135, 183
paste stability, M109
pasteurization, T134, T181
pasture, 77, M16
pasture vs. TMR, 496, M227
pathogen-associated molecular patterns (PAMP), M25
PBMC, 87, 293
peptic, T98
pedigree analysis, 99
pedometer, 241, M51
peer review, 14
pegbovigrastim, 313, 378, T18, T27
pellet, 511, T288
pelleting temperature, T276
\textit{Penicillium candidum}, M110
\textit{Penicillium purpureum}, T123
peptidomic, 279
performance, 382, 508, M49, M243, M286, T138, T200
perilipin5, 149
period2 gene, 414
periparturium, 31, 506, M276, M291, M292, T234
periparturient, 150
periparturient diseases, T27
periparturient performance, M281
periparturient period, M189, M191, M321
permeability, T103
permeate, 474
peroxisome proliferator-activated receptors (PPAR), 428
PGF$_{2\alpha}$, 316
PGF$_{2\alpha}$ dose-frequency, M185
PGFM, 315
pH, 223, M110, M309
phagocytosis, M200
phenotype, 191, 273
phenotyping, 452, 454
phosphate, M238
phosphatidylcholine, T239
phosphorus, T110, T111
photoperiod, 99, 419
\textit{Pichia}, T262
piglet, 405
pizza cheese, 180
placenta, 433, T203
plane of nutrition, 134, 231
plant protein, 286
planting population, T111
plasma, T166
plasma lysine, M254
plasmid, 397
polyhalite mineral, T296
polyinosinic-polycytidylic acid (Poly I:C), M25
polymerized whey protein, M134
polypheol, 34, M128, T214, T293
polyosaccharides, 292
polysaturated fatty acids, M265
post-absorptive, T168
postbiotic, 202
postpartum, 114
postpartum disorder, T52
postpartum Holstein cow, 98
post-pasteurization contamination, M156
post-weaned heifer, T253
post-weaning, T144
potassium, 246, T30
potentially digestible neutral detergent fiber, M160
powder goat milk, M137
pre- and post-weaning, 134, 231
prebiotic, 225, 271, M123, T248
precision dairy, M48, T140
precision dairy farming, M37
precision dairy technology, 120, 145, 157, 240, M15
precision farming, 120
precision technology, 232, 449
prediction accuracy, 4
pre-fermented juice, 75
prefresh TMR, T272
pregnancy, 102, 335, 433, 458, M222
pregnancy establishment, 278
pregnancy rate, M224
pregnancy status, 330
preliminary incubation (PI), M36
premium, 324
prepartum, M195, M220
presenting, 13
preservation, T72
prevention investment, 200
preweaned calf, 117, 239
primiparous cow, T134
principal component regression, M1
probiotic, 355, M31, T47, T284
probiotic bacteria, M123
process capability, M142
process(ed) cheese, 20, 281
processing, 287, T63
producer workshop, M150
production, 95, 204, 216, 242, 245, M207, T178, T217
production level, 107
productivity, T7
profit, 173
profitability, 334, T7
progesterone, M216, T163, T206
prolactin receptor, 415, M176
propidium monoazide, T104
propionate, T168, T250
propylene glycol, 251
prostaglandin F_2α dose, T208
prostate androgen-regulated mucin-like protein 1 (PARM1), 331
protease, T247
protection, T225
protein, 511, 512, T91, T288
protein bar, T100
protein degradability, M246
protein source, M287
protein stability, M130
protein structure, 129
protein-deficient diet, 513
proteolysis, M171, T89
proteolytic activity, T107
proteome, 85
proteomic analyses, M101
proteomics, 280, 307
protozoa, T269
Pseudomonas spp., T107
psychrotolerant spore-forming bacteria, 131
quality, T65, T71
quality control, T96
quartz crystal microbalance, 402
Queso Fresco, M118, M119
radiofrequency dielectric heat, T94
ration formulation, 188
raw milk, 462, T72, T107
raw milk and teat skin microbiota, 375
recumbency, T33
recycled manure solids, T9
red clover, 75
reduced-fat distillers grains, 508, T279
reduced-mineral micellar casein concentrate, M4
reducing equivalents, 426
reference assembly, 168
regression, 6, 63
regulatory, 53
repeatability, 434
repeat breeder, 434
regulation, 53
reproductive efficiency, 434
reproductive performance, T305
requirement, 512
research, 15, 363
residual feed intake (RFI), 89, 318, M271, M312, T166
residue, T125
resilience, 76, T199
resveratrol, M126
resynchronization, M218, M221
retained placenta, M63, T209
retention pay off, 324
reticulum, M273
reverse transcription quantitative PCR (RTqPCR), 429
review, 2
rheological properties, 284
rheology, M7, M109, M135, T62
ripened goat cheese, M107
risk, 22
risk factors, 44
RNA sequencing, T165
RNaseq, 427
robotic milking, 156, M21, T37, T195, T196
rumen, 1, 234, 298, 455, M26, M264, M273, M278, T26, T225, T268, T284, T290
rumen bacteria, 222, M313
rumen degradability, T242
rumen degradable protein, 493
rumen development, M19, M266
rumen epithelial barrier, 228
rumen epithelium, 93, M296
rumen escape, T285
rumen fatty acid, 250
rumen fermentation, 214, M246, T241, T273
rumen fluid, M39, T22
rumen function, 206
rumen gas production, M79
rumen microbial fermentation, M287
rumen microbial protein, M317
rumen microbiome, 216, M269, T199
rumen microbiota, M265, M288
rumen outflow, 491
rumen pH, 217, 302, M11
rumen protection, M274
rumen simulation, M263
rumen-protected amino acid, 35, 514
rumen-protected B vitamin, T256, T287
rumen-protected histidine, M262
rumen-protected lysine, M226, M239, M252, M254, T278, T283
rumen-protected methionine, M40
rumen-undegradable protein, M253, T266
ruminant physiology, T135
rumininal acidosis, 228, T282
ruminal bacteria, T258
ruminal degradation of protein, T240
ruminal digesta, M298
ruminal escape, T298
ruminal metabolism, T246
ruminal microbiome, M60
ruminal VFA, T259
ruminant, M268
ruminant physiology, 262
rumination, 379, 390, M46, M294, T267
runs of homozygosity (ROH), 165, 166, 460, T58
ryegrass, 343

S

Saccharomyces cerevisiae, 377
Saccharomyces cerevisiae fermentation product, 33, 350, M11, T275
Saccharomyces fermentation product, 33, 350, M11, T275
Saccharomyces cerevisiae fermentation product, 49
Sahiwal, M95
Salmonella, 290, M68
salt, T69
sampling, T1
sanitation, M156
SARA, 217, 223, 261, 376, M311, T258
saturated fat, 70, 105
SCC, 27, 156, 325, M41, M97, M143, T34, T63, T192
school children, M131
scientific writing, 12
scours, T38
season, M151
seasonality, 322, 323
selection, M98
selection index, M99
selective dry cow therapy, 159, 160
selective medium, T78
selenium, M302
senen, 430
Se-Met, M104
semen, 430
seminal plasma, 104, M219
sensor technology, 144
sensorial analysis, T64
sensors, 451
sequencing, M267, M269, T38
sequential window acquisition of all theoretical mass spectra (SWATH)-MS, M179
sequestering agents, 224
serotonin, 137, 481, M26, M38
serum protein concentrate, 282
sestrin2, M172
Se-yeast, M104
sheep, 251, M61, M302, T20
sheep milk, M180, T154
shelf life, M6, T64, T71
Shiga toxin-producing Escherichia coli, M65
short-chain fatty acid, M187, M242
short-Resynch, M218
short-term feed intake, M228
sickness behavior, T13
silage, 227, M155, M170, T113
silage inoculant, T114
silage utilization, T120
simulation, 170, M207
sine, 322, 323
single droplet drying, 409, M4
single step, 387
single-step genomic BLUP, 170
16S rRNA, 43
16S rRNA sequencing, T258
size, 192
skim milk concentrate, 467
skin injury, 365
sick-haired cows, M186
sick-haired Holstein cow, T162
sick-haired Puerto Rican Holstein cow, M30
cow
smallholder dairying, T93
SNP effect, 172
SNP-MACE, 172
social behavior, 138
social hierarchy, 138
sodium, T66
sodium butyrate, T253
sodium dodecyl sulfate, T104
sodium selenite, M289
soft cheese, M109
sole ulcer, 59
solid-state fermentation, T220
soluble fiber, T292, T300
somatic cell, M72, T50
somatic cell count, 27, 156, 325, M41, M97, M143, T34, T63, T192
sorghum, 345, T216
sorghum distillers grains, T230
sorghum silage, 72, M164, M165
sorghum variety, M163
sorting, 139, M43, T15, T272
source tracker, 375
southern region, 361
soy milk, 130
soybean meal, T229
spatial clustering, M322
spatial distribution, T101
spectral preprocess, M316
sphingoid body protein-4, 385
spingomyelin, 506, M291, T239
spoilage, T280
spore, M8, M114, M115
spore removal, 401
sporeform, 289, M115
spore-forming bacteria, M113
sporulation, M114
spot sampling, M236
spot sampling frequency, M305
spot urinary sampling, M225
ssGWAS, 59
stabilized rice bran, T32
stall, T150
stall width, T10
standard plate count (SPC), M36
standards, 400
Staphylococcus aureus, 305, 306, M57, M146, T104
starch, 299, M29, M293, T235
starch digestibility, 354, M230
starch flow, 345
starch half-life, T295
starter, 435, M261
starter culture, M108
starter intake, M27, T128
statistical process control, M142
steam-flaked corn, T132, T133
stearic acid, 108, 111
stearoyl-CoA desaturase 1 (SCD1), M173
steatosis, M276, T239
steer, 488
steps, M56
steroid, T155
stillbirth, T11
stocking rate, T115, T116, T119
storage, M140, T64
storage changes, M138
storage stability, M137
strained yogurt, T95
strategies, M204
stray voltage, T176, T177
Streptococcus agalactiae-induced mastitis, M101
Streptococcus thermophilus, 19, M124
Streptococcus thermophilus ASCC 1275, 398
stress, 425
stress survival, 397
structure-function, 406
students, 260
subacute ruminal acidosis, 217, 223, 261, 376, M311, T258
subclinical, M196
subclinical hypocalcemia, M80, M91, M308
subclinical infection, M41
subclinical ketosis, M9, T37
subclinical mastitis, 44, 161
subcritical water, 23
subcutaneous fat, M75
sugar, M247
sugar-cane aphid, M164
sugars, T292, T300

J. Dairy Sci. Vol. 101, Suppl. 2

449
superchilling, 181
supercritical fluid extraction, M139
supplementation, M237
supplementation in grazing, T245
survey, M157
survival, T210
sustainability, 242, M202, T189, T243
sustainable, 239
sweat gland, T162
sweetener, T100
systematic review, 38
systems, 76

T

tail behavior, 232
taurine, 309

TDN, T126
tea polyphenols, M174
teaching, 255, 259, M325
teat canal diameter, M85
teat morphology, 123
teat-end score, M182
technical lignins, T280
technology, 122, M37
temperament, M48
temperature, 127, M314
temperature-humidity index, 94
temporal zone, 385
testes, 431
testing, 400
textural property, T68
texture, 292, M135
texturization, M129
thermal, T91
thermal processing, M149
thermodynamic control, 208
thermoregulation, T161, T162
thermotolerance threshold, M186
thermotolerant, T181
thiazolidinedione, 253, T17
tie-rail, 367
tiestall, 366, T8
tiestall housing, T9
tight junctions, 228
timed AI, 334
tissue regulation, 84
titratable acidity, T126
TMR, 440, M232, T198, T213
topical, T182
total antioxidation status, 346
total bacterial count, M143
total health cost, 396

U

udder morphology, 247
ultrafiltration, 21, M108
ultra-short spontaneous cure rate, M33
ultrasound treatment, T89
undergraduate, M325
undergraduate education, 259
undifferentiated diarrhea, 377
undigested fiber, 336, M298
unsaturated fatty acids, M319, T300
UPLC, M148
urea, T228
urine, M24, T303
urine minerals, M194
urine output, M236
urine pH, T272, T296
US Holstein, M96
uterus, 102, 315, T45

V

vaccine, 305, 447, 448, M66, M73
vaginal discharge, M224
vaginal temperature, 92, M186
validation, M55, T1
value-added, 473
variability, T121
variation, 513, T150
veterinary, M326
veterinary drugs, T105
VFA, M78, M79, T241
vigor, 39, 40
virginiamycin, T178
visceral fat, M75
Vista Pre T, T184
visual observation, 333
vitamin D, 71, T151
vitamin D deficiency, M131
vitamin E, 351
vitamins E and C, 125
volatile fatty acid, M78, M79, T241
vulvar lesion, 370

W

water, 328
water activity, M137
water buffalo, 280
water interface, 21
weaned calf, 440, T213, T223
weaning, 51, 296, 297, 302, T129, T140, T141, T142
wear behavior, T62
weight gain, T263
welfare, 244, 364, 366, 372, M326
welfare assessment, 128, 365, T1
wellbeing, 235, T53
whey, 457, 472, T69
whey protein, 16, 280, T87
whey protein depletion, 177
whey protein isolate (WPI), M5
whey protein phospholipid concentrate (WPPC), M129
whiteness, M2
whole corn, T132, T133
whole genome, M269
whole-genome scan, 57, 65
whole-genome sequencing, 288, 290
whole-plant corn silage, M158, M270
wild birds, T14
wild type-haired Puerto Rican Holstein cow, M30
winter annuals, M13
wood kraft pulp, M311
writing, 13

X

X-ray diffractometry, 179
xylanase, 72, M244
X-Zelit, M308

Y

yeast, T223, T284
yeast culture, M78, M248, T51
yeast inhibition, M121
yeast product, M68
yellow wine lees, T220
yield, M163
yogurt, 24, 470, M124, M135, T78, T82
yogurt structure, 466
youth, M153

Z

Zea mays, T123
zearalenone, 77, T290
zeolite, 150
zeolite A, M280, M281
zinc, 136, 420, T159