

1988 Range Plant Materials Trial Update, Alturas

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In the late fifties and early sixties, Burgess Kay, University of California Extension Range Specialist, conducted a plant materials trial on the Likely Table in Northeastern California to find plant varieties that would out-produce cheat grass.

Among the grasses, Oahe Intermediate Wheatgrass had the greatest average yield for 14 years, followed by Nordan Crested Wheatgrass, Greenar Intermediate Wheatgrass, and Topar Pubescent Wheatgrass (Table 1). Oahe and Greenar Intermediate Wheatgrasses, and Topar Pubescent Wheatgrass were also easier to establish than Nordan Crested Wheatgrass. This is because Topar, Greenar, and Oahe Wheatgrass seeds are about twice the size of Crested Wheatgrass and, therefore, can be planted deeper than Crested Wheatgrass and successfully emerge. This is an especially important consideration in windy areas. In addition, Topar, Greenar, and Oahe Intermediate Wheatgrass produce underground stems in the second or third year, thus thickening the stand. Crested Wheatgrass is not generally rhizomonous. Sherman Big Blugrass was also an excellent producer and often out-yielded the wheatgrasses while producing new spring growth several weeks ahead of the wheatgrasses. On dry, windy sites, however, the very small seed of Sherman Big Bluegrass and the fact that seedlings are easily pulled up by livestock grazing prevents its widespread use.

Since the early seventies, many new varieties of grasses, forbs, and legumes have been developed for use in semi-arid and arid environments. The question has arisen as to which of these new plant varieties are best adapted to the conditions which exist in Northeastern California and if these new plant varieties will out-produce the old varieties presently recommended.

In order to better be able to recommend new plant materials that are adapted to Northeastern California, a trial was started in the spring of 1984 at the Old BLM Headquarters, 4 miles west of Alturas. The main objective of this trial was to evaluate forage production and longevity of new plant materials on a typical native rangeland site that would be considered for vegetation manipulation. A total of 77 varieties of grasses and legumes were planted.

This trial is clipped three times a year: 1) at the time of spring turn-out for cattle (April 15-30); 2) at the end of the season (June 15-30); and 3) in the fall to obtain fall residues (Oct. 1-15).

It will take 8-10 years to fully evaluate these plant materials, however, a few general observations can be made regarding this trial:

- (1) Total rainfall has significantly affected year-to-year forage production. During the first three years of this trial, rainfall has fluctuated over 100%, from a high of 17.3 inches the first year to a low of 7.9 inches the second year.

- (2) To date the grass varieties that are now recommended for rangeland seeding (Nordan Crested Wheatgrass, Oahe and Greenar Intermediate Wheatgrass, and Topar Pubescent Wheatgrass) have been some of the top producing grasses. No other grasses are significantly better than the above grasses.
- (3) Indian Rice Grass and Wildrye varieties didn't establish well at this range site.
- (4) Two years of very low rainfall has drastically affected forage yields, especially alfalfa yields, and could effect alfalfa survivability.

TABLE 1. PERENNIAL GRASS YIELDS 1957-1970 LIKELY (Bud Kay)

| | Yield in lbs./acre | | |
|---------------------------------|--------------------|------------|-------------|
| | High (1964) | Low (1966) | 14-yr. Avg. |
| Nordan Crested Wheatgrass | 3220 | 150 | 750 |
| Greenar Intermediate Wheatgrass | 2130 | 170 | 610 |
| Oahe Intermediate Wheatgrass | 2800 | 200 | 840 |
| Topar Pubescent Wheatgrass | 1320 | 90 | 540 |
| Sherman Big Bluegrass | 2950 | 270 | 930 |

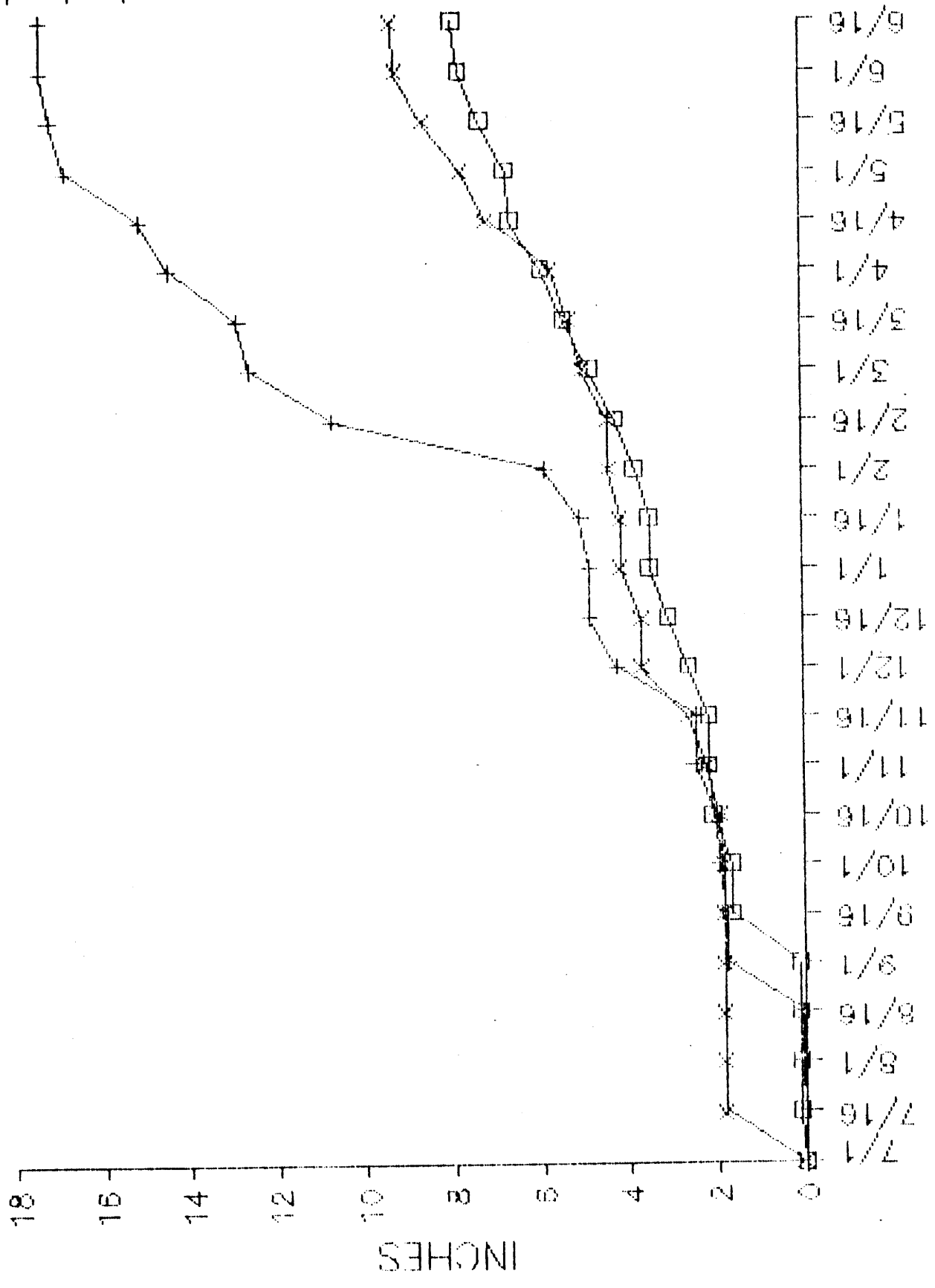
**TABLE 2. SUMMARY OF PERENNIAL GRASS AND LEGUME YIELDS
RANGE PLANT MATERIALS TRIAL, ALTURAS 1986 - 1988**

| | Varieties | Average lbs./Ac | Production of Varieties Recommended at Present |
|-------------------------|-----------|--------------------|---|
| Crested Wheatgrass | 9 | 1351 | Nordan = 2004 |
| Intermediate Wheatgrass | 3 | 1410 | Greenar = 1705 Oahe = 1441 |
| Western Wheatgrass | 7 | 1373 | |
| Tall Wheatgrass | 3 | 1246 | |
| Pubescent Wheatgrass | 4 | 1559 | Topar = 1600 |
| Other Wheatgrass | 4 | 1300 | |
| Wild Rye | 4 | 1017 | |
| Fescue | 5 | 968 | |
| Other Grasses | 8 | 1000 | |
| Alfalfa | 17 | 986 | Ladak = 542 |
| Vetch | 4 | 2014 | |

Significant Year Affect $P > .05$
No Significant Difference Between Varieties

RAINFALL AT THE B L M PLOT ALTURAS

1986
1987
1988



BI-MONTHLY DATE

TABLE 3. RAINFALL 1986 - 1987 BLM PLOT ALTURAS

SPRING GROWTH YIELDS 1986 - 1988

SUMMARY OF BLM RANGELAND GRASSES AND LEGUMES

SPRING GROWTH CLIPPED:

1986 APRIL 17 - 19
 1987 APRIL 20 - 23
 1988 APRIL 25 - 28

| PLANT NO. | | | 1986 | 1987 | 1988 | AVERAGE | |
|---------------|---|------------------|--------------------------|-----------|-----------|-----------|-----|
| | | | LBS. ACRE | LBS. ACRE | LBS. ACRE | LBS. ACRE | |
| 1 | * | NORDAN | CRESTED WHEATGRASS | 615 | 570 | 415 | 534 |
| 2 | | EPHRAIM | CRESTED WHEATGRASS | 246 | 456 | 340 | 362 |
| 3 | | FAIRWAY | CRESTED WHEATGRASS | 305 | 696 | 496 | 499 |
| 4 | | SIBERIAN P27 | CRESTED WHEATGRASS | 486 | 552 | 414 | 484 |
| 5 | | STANDARD | CRESTED WHEATGRASS | 302 | 402 | 267 | 323 |
| 6 | | RUFF | CRESTED WHEATGRASS | 454 | 593 | 261 | 442 |
| 56 | | HYCREST SYNTH 2 | CRESTED WHEATGRASS | 593 | 535 | 431 | 519 |
| 57 | | 1 - 28 | CRESTED WHEATGRASS | 521 | 612 | 489 | 540 |
| 58 | | SYN 1 FARMINGTON | CRESTED WHEATGRASS | 496 | 745 | 521 | 567 |
| NO. VARIETIES | | | 9 | 9 | 9 | 9 | |
| AVERAGE | | | 447 | 575 | 406 | 477 | |
| ----- | | | | | | | |
| 14 | * | TEGMAE | INTERMEDIATE WHT. | 394 | 440 | 149 | 327 |
| 15 | * | GREENAR | INTERMEDIATE WHT. | 829 | 504 | 389 | 574 |
| 16 | | GAHE | INTERMEDIATE WHT. | 658 | 460 | 297 | 472 |
| NO. VARIETIES | | | 3 | 3 | 3 | 3 | |
| AVERAGE | | | 627 | 468 | 275 | 458 | |
| ----- | | | | | | | |
| 7 | | ROSANA | WESTERN WHEATGRASS | 327 | 249 | 361 | 312 |
| 8 | | ARRIBA | WESTERN WHEATGRASS | 536 | 482 | 349 | 462 |
| 54 | | RODAN | WESTERN WHEATGRASS | 508 | 262 | 230 | 340 |
| 60 | | SLATE | WESTERN WHEATGRASS | 751 | 604 | 440 | 599 |
| 61 | | ZORO | WESTERN WHEATGRASS | | | | |
| 62 | | FLINTLOCK | WESTERN WHEATGRASS | 133 | 266 | 341 | 246 |
| 63 | | BARTON | WESTERN WHEATGRASS | 165 | 229 | 350 | 258 |
| 64 | | PLATTE | WESTERN WHEATGRASS | 401 | 387 | 344 | 377 |
| NO. VARIETIES | | | 7 | 7 | 7 | 7 | |
| AVERAGE | | | 406 | 357 | 349 | 371 | |
| ----- | | | | | | | |
| 10 | | JOSE | TALL WHEATGRASS | 314 | 296 | 193 | 268 |
| 11 | | LAREO | TALL WHEATGRASS | 417 | 147 | 197 | 250 |
| 12 | | OREIT | TALL WHEATGRASS | | | | |
| NO. VARIETIES | | | 2 | 2 | 2 | 2 | |
| AVERAGE | | | 365 | 222 | 190 | 259 | |
| ----- | | | | | | | |
| 17 | * | TOPAR | PUBESCENT PUBESCENT WHT. | 733 | 424 | 222 | 460 |
| 18 | | LUNA | PUBESCENT PUBESCENT WHT. | 477 | 431 | 309 | 406 |
| 19 | | GREENLEAF | PUBESCENT PUBESCENT WHT. | 632 | 419 | 266 | 439 |
| 20 | | MANDAN | PUBESCENT PUBESCENT WHT. | 561 | 404 | 412 | 459 |
| NO. VARIETIES | | | 4 | 4 | 4 | 4 | |
| AVERAGE | | | 601 | 420 | 302 | 441 | |

| | | | | | | |
|----|---------|--------------------|-----|-----|-----|-----|
| 38 | WHITMAN | BEARDESS WHT. | 659 | 780 | 553 | 731 |
| 26 | SECAR | BLUERUNCH WHT. | 637 | 871 | 431 | 705 |
| 13 | REVENUE | SLANDER WHEATGRASS | | | | |
| 49 | SODAR | STREAMBANK WHT. | 340 | 632 | 315 | 429 |
| 40 | CRITANE | THICKSPINE WHT. | 567 | 834 | 198 | 531 |

| | | | | | | |
|---------------|--|--|-----|-----|-----|-----|
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 642 | 761 | 374 | 599 |

| | | | | | | |
|----|-------------|------------------|-----|-----|-----|-----|
| 27 | PRAIRELAND | ALTAI WILD RYE | 788 | 484 | 474 | 581 |
| 24 | MASKAT | BAKIN WILD RYE | 356 | 465 | 270 | 363 |
| 9 | SANNI | RUSSIAN WILD RYE | 421 | 358 | 309 | 363 |
| 58 | SYNTHETIC 2 | RUSSIAN WILD RYE | 359 | 350 | 374 | 371 |

| | | | | | | |
|---------------|--|--|-----|-----|-----|-----|
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 499 | 414 | 357 | 420 |

| | | | | | | |
|----|-----------|----------------|-----|-----|-----|-----|
| 29 | ROBONDO | ARIZONA FESCUE | 470 | 742 | 228 | 496 |
| 66 | | FESTUCA AMPLA | 245 | 354 | 101 | 237 |
| 32 | DURAR | HARD FESCUE | 471 | 609 | 478 | 519 |
| 31 | FORTPESSE | RED FESCUE | 212 | 145 | 101 | 154 |
| 36 | COVAR | SHEEP FESCUE | 311 | 589 | 446 | 445 |

| | | | | | | |
|---------------|--|--|-----|-----|-----|-----|
| NO. VARIETIES | | | 5 | 5 | 5 | 5 |
| AVERAGE | | | 340 | 494 | 270 | 368 |

| | | | | | | |
|----|---------|-------------------------|------|-----|-----|------|
| 76 | R S I | A. REPEND X A. SPICATUM | 386 | 375 | 280 | 347 |
| 25 | SHERMAN | BIG BLUEGRASS | 2104 | 702 | 283 | 1029 |
| 37 | CANBAR | CANEY BLUEGRASS | 422 | 268 | 0 | 230 |
| 48 | | DACTYLIS GLOMERATA ? | 271 | 262 | 176 | 236 |
| 21 | KEZPAR | INDIAN RICE GRASS | | | | 0 |
| 22 | PALOMA | INDIAN RICE GRASS | 204 | 0 | 0 | 69 |
| 17 | BERBER | ORCHARD GRASS | | | | 0 |
| 28 | PAUTE | ORCHARD GRASS | 281 | 129 | 107 | 173 |
| 34 | | RATIO 5:4 #35:#34 | 678 | 697 | 609 | 661 |
| 24 | LINCOLN | SMOOTH BROKE | 671 | 304 | 243 | 406 |
| 33 | | TUNDRA BLUEGRASS | | | | 0 |

| | | | | | | |
|---------------|--|--|-----|-----|-----|-----|
| NO. VARIETIES | | | 8 | 8 | 8 | 11 |
| AVERAGE | | | 627 | 342 | 212 | 286 |

| | | | | | | |
|------|---------------|---------|------|------|---|-----|
| 41 * | LADDER 8E | ALFALFA | 1257 | 363 | 0 | 540 |
| 42 | SPREDDER 2 | ALFALFA | 1065 | 364 | 0 | 478 |
| 43 | VERNAL | ALFALFA | 1373 | 502 | 0 | 625 |
| 44 | RANGELANDER | ALFALFA | 1355 | 543 | 0 | 632 |
| 45 | DRYLANDER | ALFALFA | 1233 | 326 | 0 | 519 |
| 46 | ROAMEF | ALFALFA | 957 | 446 | 0 | 481 |
| 47 | WASHOE | ALFALFA | 581 | 296 | 0 | 292 |
| 55 | SEMIPALATINSK | ALFALFA | 1473 | 371 | 0 | 615 |
| 67 | HEINRICKS | ALFALFA | 793 | 598 | 0 | 464 |
| 68 | RHIZOMA | ALFALFA | 1693 | 1040 | 0 | 911 |
| 69 | WL 320 | ALFALFA | 1201 | 591 | 0 | 597 |
| 70 | AS - 67 | ALFALFA | 916 | 268 | 0 | 395 |
| 71 | PIONEER 55E | ALFALFA | 853 | 400 | 0 | 418 |
| 72 | H - 104 R | ALFALFA | 919 | 624 | 0 | 514 |
| 73 | DRUMMER | ALFALFA | 1369 | 363 | 0 | 577 |
| 74 | WL221 | ALFALFA | 1164 | 730 | 0 | 632 |
| 75 | WL312 | ALFALFA | 982 | 517 | 0 | 493 |

| | | | | | | |
|---------------|--|--|------|-----|----|-----|
| NO. VARIETIES | | | 17 | 17 | 17 | 17 |
| AVERAGE | | | 1130 | 491 | 0 | 540 |

| | | | | | | |
|---------------|--------|---------------------|-----|-----|-----|-----|
| 65 | | ASTRAGALUS FACALTUS | 607 | 847 | 436 | 630 |
| 51 | | BIG FLOWER VETCH | 374 | 0 | 0 | 125 |
| 50 | CICER | MILK VETCH | 786 | 617 | 224 | 542 |
| 77 | LUTANA | MILK VETCH | 593 | 514 | 184 | 430 |
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 590 | 495 | 211 | 432 |
| ----- | | | | | | |
| 35 | | KOCHIA PROSTRATA | 343 | 177 | 137 | 219 |
| 52 | APPAR | LEWIS FLAX | | | | 0 |
| 53 | DELAR | SMALL BURNET | 472 | 200 | 40 | 237 |
| NO. VARIETIES | | | 2 | 2 | 2 | 3 |
| AVERAGE | | | 407 | 189 | 88 | 152 |
| ----- | | | | | | |

* Indicates standards by which other grasses are compared

END OF GREEN SEASON YIELDS 1986-1988

TOTAL GROWTH CLIPPED - END OF GREEN SEASON

1986 ALFALFA JUNE 19
 GRASSES JUNE 23 - 24
 1987 JUNE 16 - 17
 1988 JUNE 20 - 21

| PLANT NO. | | | 1986 | 1987 | 1988 | AVERAGE |
|---------------|------------------|--------------------------|-----------|-----------|-----------|-----------|
| | | | LBS. ACRE | LBS. ACRE | LBS. ACRE | LBS. ACRE |
| 1 * | NORDAN | CRESTED WHEATGRASS | 2600 | 1605 | 1806 | 2004 |
| 2 | EPHRAIM | CRESTED WHEATGRASS | 1346 | 898 | 759 | 1001 |
| 3 | FAIRWAY | CRESTED WHEATGRASS | 1723 | 1036 | 1363 | 1374 |
| 4 | SIBERIAN P27 | CRESTED WHEATGRASS | 1917 | 922 | 803 | 1214 |
| 5 | STANDARD | CRESTED WHEATGRASS | 1435 | 856 | 891 | 1061 |
| 6 | RUFF | CRESTED WHEATGRASS | 1928 | 1254 | 898 | 1360 |
| 56 | HYCREST SYNTH 2 | CRESTED WHEATGRASS | 1588 | 1408 | 1064 | 1353 |
| 57 | I - 28 | CRESTED WHEATGRASS | 1602 | 1485 | 1047 | 1378 |
| 59 | SYN 1 FARMINGTON | CRESTED WHEATGRASS | 2130 | 1024 | 1097 | 1417 |
| NO. VARIETIES | | | 9 | 9 | 9 | 9 |
| AVERAGE | | | 1808 | 1166 | 1081 | 1351 |
| ----- | | | | | | |
| 14 * | TEGMAR | INTERMEDIATE WHT. | 1950 | 713 | 569 | 1084 |
| 15 * | GREENAR | INTERMEDIATE WHT. | 2724 | 1306 | 1086 | 1705 |
| 16 | QAHE | INTERMEDIATE WHT. | 1908 | 1216 | 1198 | 1441 |
| NO. VARIETIES | | | 3 | 3 | 3 | 3 |
| AVERAGE | | | 2194 | 1078 | 958 | 1410 |
| ----- | | | | | | |
| 7 | ROSANA | WESTERN WHEATGRASS | 1726 | 605 | 839 | 1057 |
| 8 | ARRIBA | WESTERN WHEATGRASS | 3022 | 1168 | 1077 | 1756 |
| 54 | RODAN | WESTERN WHEATGRASS | 2232 | 641 | 837 | 1237 |
| 60 | SLATE | WESTERN WHEATGRASS | 3512 | 1234 | 1420 | 2055 |
| 61 | ZORD | WESTERN WHEATGRASS | | | | |
| 62 | FLINTLOCK | WESTERN WHEATGRASS | 1300 | 940 | 1455 | 1232 |
| 63 | BARTON | WESTERN WHEATGRASS | 1227 | 946 | 980 | 1051 |
| 64 | PLATTE | WESTERN WHEATGRASS | 2247 | 743 | 688 | 1226 |
| NO. VARIETIES | | | 7 | 7 | 7 | 7 |
| AVERAGE | | | 2181 | 897 | 1042 | 1373 |
| ----- | | | | | | |
| 10 | JOSE | TALL WHEATGRASS | 1998 | 928 | 1083 | 1336 |
| 11 | LARGO | TALL WHEATGRASS | 1965 | 677 | 828 | 1156 |
| 12 | ORBIT | TALL WHEATGRASS | | | | |
| NO. VARIETIES | | | 2 | 2 | 2 | 2 |
| AVERAGE | | | 1981 | 803 | 955 | 1246 |
| ----- | | | | | | |
| 17 * | TOPAR | PUBESCENT PUBESCENT WHT. | 2876 | 868 | 1054 | 1600 |
| 18 | LUNA | PUBESCENT PUBESCENT WHT. | 2391 | 1066 | 858 | 1438 |
| 19 | GREENLEAF | PUBESCENT PUBESCENT WHT. | 3364 | 803 | 769 | 1645 |
| 20 | MANDAN | PUBESCENT PUBESCENT WHT. | 2794 | 1086 | 784 | 1555 |
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 2856 | 956 | 866 | 1559 |

| | | | | | | |
|----|---------|--------------------|------|------|------|------|
| 13 | REVENUE | SLENDER WHEATGRASS | | | | |
| 26 | SECAR | BLUERUNCH WHT. | 1421 | 958 | 1083 | 1154 |
| 38 | WHITMAR | BEARDLESS WHT. | 2251 | 1575 | 932 | 1586 |
| 40 | CRITANA | THICKSPIKE WHT. | 2501 | 904 | 1243 | 1550 |
| 49 | SODAR | STREAMBANK WHT. | 1447 | 599 | 684 | 910 |

| | | | | | | |
|---------------|--|--|------|------|-----|------|
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 1905 | 1009 | 986 | 1300 |

| | | | | | | |
|----|------------|------------------|------|-----|------|------|
| 9 | SANKI | RUSSIAN WILD RYE | 1097 | 557 | 453 | 702 |
| 23 | FRAIRELAND | ALTAI WILD RYE | 2868 | 575 | 609 | 1350 |
| 34 | MAGNAR | BASIN WILD RYE | 2100 | 821 | 1102 | 1341 |
| 58 | SYNETHC 2 | RUSSIAN WILD RYE | 894 | 533 | 601 | 676 |

| | | | | | | |
|---------------|--|--|------|-----|-----|------|
| NO. VARIETIES | | | 4 | 4 | 4 | 4 |
| AVERAGE | | | 1740 | 621 | 691 | 1017 |

| | | | | | | |
|----|----------|----------------|------|------|------|------|
| 29 | RODONDO | ARIZONA FESCUE | 2017 | 0 | 1667 | 1228 |
| 30 | COVAR | SHEEP FESCUE | 1609 | 1479 | 992 | 1360 |
| 31 | FORTRESS | RED FESCUE | 1566 | 228 | 176 | 656 |
| 32 | DURAR | HARD FESCUE | 1572 | 1030 | 939 | 1180 |
| 66 | | FESTUCA AMPLA | 696 | 327 | 225 | 416 |

| | | | | | | |
|---------------|--|--|------|-----|-----|-----|
| NO. VARIETIES | | | 5 | 5 | 5 | 5 |
| AVERAGE | | | 1492 | 613 | 800 | 968 |

| | | | | | | |
|----|---------|-------------------------|------|------|------|------|
| 21 | NEZFAR | INDIAN RICE GRASS | | | | |
| 22 | PALOMA | INDIAN RICE GRASS | 910 | 920 | 1179 | 1003 |
| 24 | LINCOLN | SMOOTH BROME | 1639 | 743 | 667 | 1016 |
| 25 | SHERMAN | BIG BLUEGRASS | 2295 | 1354 | 707 | 1452 |
| 27 | BERBER | ORCHARD GRASS | | | | |
| 28 | PAIUTE | ORCHARD GRASS | 1128 | 323 | 171 | 541 |
| 36 | | TUNDRA BLUEGRASS | | | | |
| 37 | CANSAR | CANBY BLUEGRASS | 494 | 168 | | 331 |
| 39 | | RATIO 5:4 #35:#34 | 2662 | 1426 | 1110 | 1732 |
| 48 | | DACTYLIS GLOMERATA ? | 1606 | 365 | 490 | 821 |
| 76 | R S I | A. REPEND X A. SPICATUM | 1560 | 775 | 971 | 1102 |

| | | | | | | |
|---------------|--|--|------|-----|-----|------|
| NO. VARIETIES | | | 8 | 8 | 7 | 8 |
| AVERAGE | | | 1537 | 759 | 756 | 1000 |

| | | | | | | |
|----|---------------|---------|------|-----|-----|------|
| 41 | * LADAK 65 | ALFALFA | 1463 | 126 | 38 | 542 |
| 42 | SPREBOR 2 | ALFALFA | 2537 | 66 | 101 | 901 |
| 43 | VERNAL | ALFALFA | 2071 | 150 | 53 | 758 |
| 44 | RANGELANDER | ALFALFA | 2708 | 108 | 65 | 960 |
| 45 | DRYLANDER | ALFALFA | 2039 | 156 | 37 | 744 |
| 46 | ROAMER | ALFALFA | 2505 | 66 | 54 | 875 |
| 47 | WASHOE | ALFALFA | 583 | 114 | 23 | 240 |
| 55 | SEMIPALATINSH | ALFALFA | 3125 | 78 | 111 | 1105 |
| 67 | HEINRICKS | ALFALFA | 3275 | 132 | 42 | 1150 |
| 68 | RHIZOMA | ALFALFA | 4531 | 168 | 61 | 1587 |
| 69 | WL 320 | ALFALFA | 3389 | 132 | 81 | 1201 |
| 70 | AS - 67 | ALFALFA | 2897 | 108 | 49 | 1018 |
| 71 | PIONEER 555 | ALFALFA | 2799 | 114 | 54 | 989 |
| 72 | H - 106 R | ALFALFA | 3553 | 144 | 85 | 1261 |
| 73 | DRUMMER | ALFALFA | 2880 | 162 | 104 | 1049 |
| 74 | WL321 | ALFALFA | 2825 | 132 | 53 | 1003 |
| 75 | WL312 | ALFALFA | 3790 | 228 | 102 | 1373 |

| | | | | | | |
|---------------|--|--|------|-----|----|-----|
| NO. VARIETIES | | | 17 | 17 | 17 | 17 |
| AVERAGE | | | 2763 | 128 | 65 | 986 |

| | | | | | | |
|---------------|--------|---------------------|------|------|-----|------|
| 50 | CICER | MILK VETCH | 8449 | 910 | 550 | 3303 |
| 51 | | BIG FLOWER VETCH | 642 | 0 | | 321 |
| 65 | | ASTRAGALUS FACALTUS | 4920 | 1192 | 979 | 2363 |
| 77 | LUTANA | MILK VETCH | 4669 | 823 | 714 | 2068 |
| NO. VARIETIES | | | 4 | 4 | 3 | 4 |
| AVERAGE | | | 4670 | 731 | 747 | 2014 |
| 35 | | KOCHIA PROSTRATA | 927 | 335 | 436 | 566 |
| 52 | APPAR | LEWIS FLAX | | | | |
| 53 | DELAR | SMALL BURNET | 1717 | 234 | 527 | 826 |
| NO. VARIETIES | | | 2 | 2 | 2 | 2 |
| AVERAGE | | | 1322 | 285 | 482 | 696 |

* Indicates standards by which other grasses are compared.

FALL FORAGE YIELDS 1986 - 1987

FALL FORAGE RESIDUE

1986 OCTOBER 7 - 8
 1987 OCTOBER 8 - 9
 1988

| PLANT NO. | | | | 1986 | 1987 | 1988 | AVERAGE |
|---------------|----|------------------|--------------------------|-----------|-----------|-----------|-----------|
| | | | | LBS. ACRE | LBS. ACRE | LBS. ACRE | LBS. ACRE |
| 1 | 1 | * NORDAN | CRESTED WHEATGRASS | 1500 | 1206 | | 1353 |
| 1 | 2 | EPHRAIM | CRESTED WHEATGRASS | 1398 | 713 | | 1055 |
| 1 | 3 | FAIRWAY | CRESTED WHEATGRASS | 937 | 874 | | 906 |
| 1 | 4 | SIBERIAN P27 | CRESTED WHEATGRASS | 1128 | 868 | | 998 |
| 1 | 5 | STANDARD | CRESTED WHEATGRASS | 1554 | 761 | | 1157 |
| 1 | 6 | RUFF | CRESTED WHEATGRASS | 1939 | 974 | | 1457 |
| 1 | 56 | HYCREST SYNTH 2 | CRESTED WHEATGRASS | 1572 | 1048 | | 1310 |
| 1 | 57 | I - 28 | CRESTED WHEATGRASS | 1468 | 665 | | 1066 |
| 1 | 59 | SYN 1 FARMINGTON | CRESTED WHEATGRASS | 1685 | 940 | | 1313 |
| NO. VARIETIES | | | | 9 | 9 | | 9 |
| AVERAGE | | | | 1464 | 894 | | 1179 |
| ----- | | | | | | | |
| 2 | 14 | * TEGMAR | INTERMEDIATE WHT. | 1602 | 593 | | 1097 |
| 2 | 15 | * GREENAR | INTERMEDIATE WHT. | 2111 | 976 | | 1543 |
| 2 | 16 | DAHE | INTERMEDIATE WHT. | 4644 | 1330 | | 2987 |
| NO. VARIETIES | | | | 3 | 3 | | 3 |
| AVERAGE | | | | 2786 | 966 | | 1876 |
| ----- | | | | | | | |
| 3 | 7 | ROSANA | WESTERN WHEATGRASS | 1883 | 665 | | 1274 |
| 3 | 8 | ARRIBA | WESTERN WHEATGRASS | 2207 | 827 | | 1517 |
| 3 | 54 | RODAN | WESTERN WHEATGRASS | 1338 | 683 | | 1010 |
| 3 | 60 | SLATE | WESTERN WHEATGRASS | 3033 | 1078 | | 2056 |
| 3 | 61 | ZORO | WESTERN WHEATGRASS | | | | |
| 3 | 62 | FLINTLOCK | WESTERN WHEATGRASS | 1344 | 767 | | 1055 |
| 3 | 63 | BARTON | WESTERN WHEATGRASS | 1991 | 862 | | 1427 |
| 3 | 64 | PLATTE | WESTERN WHEATGRASS | 2506 | 683 | | 1594 |
| NO. VARIETIES | | | | 7 | 7 | | 7 |
| AVERAGE | | | | 2043 | 795 | | 1419 |
| ----- | | | | | | | |
| 4 | 10 | JOSE | TALL WHEATGRASS | 2254 | 653 | | 1454 |
| 4 | 11 | LARGO | TALL WHEATGRASS | 2230 | 515 | | 1373 |
| 4 | 12 | ORBIT | TALL WHEATGRASS | | | | |
| NO. VARIETIES | | | | 2 | 2 | | 2 |
| AVERAGE | | | | 2242 | 584 | | 1413 |
| ----- | | | | | | | |
| 5 | 17 | * TOPAK | PUBESCENT PUBESCENT WHT. | 3572 | 653 | | 2112 |
| 5 | 18 | LUNA | PUBESCENT PUBESCENT WHT. | 2015 | 1222 | | 1618 |
| 5 | 19 | GREENLEAF | PUBESCENT PUBESCENT WHT. | 3488 | 827 | | 2157 |
| 5 | 20 | MANDAN | PUBESCENT PUBESCENT WHT. | 3464 | 1078 | | 2271 |
| NO. VARIETIES | | | | 4 | 4 | | 4 |
| AVERAGE | | | | 3135 | 945 | | 2040 |

| | | | | | | |
|---|----|---------|--------------------|------|------|------|
| 6 | 13 | REVENUE | SLENDER WHEATGRASS | | | |
| 6 | 26 | SECAR | BLUEBUNCH WHT. | 1781 | 1641 | 1711 |
| 6 | 38 | WHITMAR | BEARDLESS WHT. | 1410 | 1240 | 1325 |
| 6 | 40 | CRITANA | THICKSPIKE WHT. | 1691 | 827 | 1259 |
| 6 | 49 | SODAR | STREAMBANK WHT. | 1404 | 503 | 954 |

NO. VARIETIES 4 4 4
AVERAGE 1572 1053 1312

| | | | | | | |
|---|----|------------|------------------|------|-----|------|
| 7 | 5 | SANKI | RUSSIAN WILD RYE | 847 | 329 | 588 |
| 7 | 23 | PRAIRELAND | ALTAI WILD RYE | 4375 | 563 | 2469 |
| 7 | 34 | MAGNAR | BASIN WILD RYE | 1907 | 575 | 1241 |
| 7 | 58 | SYNETHIC 2 | RUSSIAN WILD RYE | 823 | 587 | 705 |

NO. VARIETIES 4 4 4
AVERAGE 1988 514 1251

| | | | | | | |
|---|----|----------|----------------|------|------|------|
| 8 | 29 | RODONDO | ARIZONA FESCUE | 853 | 0 | 426 |
| 8 | 30 | COVAR | SHEEP FESCUE | 500 | 1234 | 867 |
| 8 | 31 | FORTRESS | RED FESCUE | 805 | 299 | 552 |
| 8 | 32 | DURAR | HARD FESCUE | 1398 | 916 | 1157 |
| 8 | 66 | | FESTUCA AMPLA | 525 | 399 | 462 |

NO. VARIETIES 5 5 5
AVERAGE 816 570 693

| | | | | | | |
|---|----|---------|-------------------------|------|------|------|
| 9 | 21 | NEZPAR | INDIAN RICE GRASS | | | |
| 9 | 22 | PALOMA | INDIAN RICE GRASS | 733 | 0 | 367 |
| 9 | 24 | LINCOLN | SMOOTH BROME | 1242 | 491 | 867 |
| 9 | 25 | SHERMAN | BIG BLUEGRASS | 3225 | 1485 | 2355 |
| 9 | 27 | BERBER | ORCHARD GRASS | | | |
| 9 | 28 | PAIUTE | ORCHARD GRASS | 494 | 455 | 474 |
| 9 | 36 | | TUNDRA BLUEGRASS | | | |
| 9 | 37 | CANBAR | CANBY BLUEGRASS | 517 | 168 | 343 |
| 9 | 39 | | RATIO 5:4 #35:#34 | 1811 | 1420 | 1615 |
| 9 | 48 | | DACTYLIS BLOMERATA ? | 757 | 581 | 669 |
| 9 | 76 | R S I | A. REPEND X A. SPICATUM | 1152 | 759 | 956 |

NO. VARIETIES 8 8 8
AVERAGE 1241 670 956

| | | | | | | |
|----|----|---------------|---------|------|-----|-----|
| 10 | 41 | * LADAK 65 | ALFALFA | 733 | 335 | 534 |
| 10 | 42 | SPREDOR 2 | ALFALFA | 829 | 108 | 468 |
| 10 | 43 | VERNAL | ALFALFA | 667 | 246 | 456 |
| 10 | 44 | RANGELANDER | ALFALFA | 937 | 138 | 537 |
| 10 | 45 | DRYLANDER | ALFALFA | 991 | 162 | 576 |
| 10 | 46 | ROAMER | ALFALFA | 847 | 192 | 519 |
| 10 | 47 | WASHOE | ALFALFA | 506 | 162 | 334 |
| 10 | 55 | SEMIPALATINSH | ALFALFA | 847 | 132 | 489 |
| 10 | 67 | HEINRICKS | ALFALFA | 1374 | 126 | 750 |
| 10 | 68 | RHIZOMA | ALFALFA | 1564 | 192 | 878 |
| 10 | 69 | WL 320 | ALFALFA | 973 | 168 | 570 |
| 10 | 70 | AS - 67 | ALFALFA | 799 | 234 | 516 |
| 10 | 71 | PIONEER 555 | ALFALFA | 1242 | 186 | 714 |
| 10 | 72 | H - 106 R | ALFALFA | 1176 | 126 | 651 |
| 10 | 73 | DRUMMER | ALFALFA | 1015 | 174 | 594 |
| 10 | 74 | WL321 | ALFALFA | 1045 | 168 | 606 |
| 10 | 75 | WL312 | ALFALFA | 1290 | 204 | 747 |

NO. VARIETIES 17 17 17
AVERAGE 990 179 585

| | | | | | | |
|-------|----|---------------|---------------------|------|-----|------|
| 11 | 50 | CICER | MILK VETCH | 2596 | 629 | 1612 |
| 11 | 51 | | BIG FLOWER VETCH | 398 | 0 | 199 |
| 11 | 65 | | ASTRAGALUS FACALTUS | 2284 | 389 | 1337 |
| 11 | 77 | LUTANA | MILK VETCH | 2147 | 303 | 1225 |
| | | NO. VARIETIES | | 4 | 4 | 4 |
| | | AVERAGE | | 1856 | 330 | 1093 |
| ----- | | | | | | |
| 12 | 35 | | KOCHIA PROSTRATA | 1416 | 970 | 1193 |
| 12 | 52 | APPAR | LEWIS FLAX | | | |
| 12 | 53 | DELAR | SMALL BURNET | 991 | 222 | 606 |
| | | NO. VARIETIES | | 2 | 2 | 2 |
| | | AVERAGE | | 1203 | 596 | 900 |
| ----- | | | | | | |

* Indicates standards by which other grasses are compared.

