

# TECHNICAL NOTES

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The State of Wyoming recently issued a Technical Note entitled "Growth Habits and Food Production of Upland Game Bird Food Plants." It was developed by J. R. Stroh, Manager, Plant Materials Center, Bridger, Wyoming. I am reproducing it verbatim for your use.

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## GROWTH HABITS AND FOOD PRODUCTION OF UPLAND GAME BIRD FOOD PLANTS

Evaluations have been completed on nine selected plant species used to attract upland game birds into specified hunting areas. The species tested at the Bridger PMC are known to be choice or preferred foods for pheasants, gray partridge, chukar partridge, and sharptail grouse. Evaluations were made on growth habits, growing season requirements, and food availability during the hunting season. No attempt was made to evaluate actual game bird use in these studies.

### Plant Growth Habit

The four game birds mentioned above are primarily ground feeders. Plants which lose or shatter their seeds readily would be most desirable to place the food where the birds will seek it first, and also to discourage use by perching songbirds. The broomcorn millets and soybean showed the poorest seed-holding ability (Table 1). Plants with weak stems that lodged easily could also be used for placing the food on the ground. Barley, broomcorn millet, and canarygrass showed this characteristic. Both of these plant habits could encourage rodent populations since they too, feed on the ground.

Areas where snow cover is to be expected during hunting season require plants which hold the seed above ground for extended periods after maturity. Strong stems and good seed-holding ability are needed. Corn, sorghum, and wheat were the best plants for this purpose. Perch-feeding birds, especially the flocking migratory kinds as blackbirds, can decimate this type of food plant long before the game birds get a chance to use it. The sunflowers had strong stems and good seed-holding abilities, but their seed crops were completely eaten by songbirds before mid-September. A nodding, less erect head, as found in the foxtail millets, would discourage the heavier perching birds.

### Growing Season Requirements

Montana and Wyoming frost-free growing seasons vary in length from over 150 to less than 50 days. The use of a species in a particular area may be governed by its ability to mature seed within the growing season. Minimum days required to reach maturity at Bridger are shown in Table 1. Wide variations exist within species, as illustrated by the broomcorn millets and the sorghum hybrids, making selection within a species for shorter growing-season areas possible. Growing seasons for some species such as wheat, barley, broomcorn millet, and foxtail millet are not measured in frost-free days, as they are for the sunflowers, corn, or soybeans. Frosts during the ripening period are more critical in reducing yields than during the seedling stage. Planting dates, then, should be calculated from the average first fall frost.

### Food Yields

Food yields (seed) are functions of species, varieties, soils, management, and other environmental factors, and will vary accordingly from year to year. The choice of a game bird food plant should be made first on adaptation, second on the plant growth habit required, and lastly on yield. Yields are given here only as a guide in choosing how much of a given species one should plant to provide sufficient food to attract and hold game birds for a specified time period. As the food supply is depleted, the birds will leave the area. The time period a wildlife food planting will hold birds in the area is a function of yield, bird population, and daily consumption per bird. The yield data presented here show that, for a given bird population, different size management areas will be required to hold the birds season-long depending on the plant species used.

Table 1. Plant growth and production characteristics of 18 plants tested for upland game bird food use at the Bridger Plant Materials Center. 1967-1969

Species	Plant Habit		Ability to Hold Seed	Days Seeded to Maturity	Seed Yield Lbs/A.	Availability During Hunting Season %	Acc. or Variety
	Stems	Heads					
BARLEY							
<i>Hordeum vulgare</i> (hooded)	Weak	Erect	Exc.	111	6111	95	MT-842148
BROOMCORN MILLET							
<i>Panicum miliaceum</i> (Proso)	Weak	Lax	Poor	120	2075	95	MH-62707 (white)
"	Weak	Lax	Poor	120	1804	95	ME-62806
"	Weak	Lax	Poor	106	4024	95	P-14992
"	Weak	Lax	Poor	88	3122	95	Commercial (Colo.)
CANARYGRASS							
<i>Phalaris canariensis</i>	Weak	Erect	Good	119	92	100	R-808
CORN							
<i>Zea mays</i> (sweet dwarf)	Stiff	Erect	Good	126	4062	75	PX-22
FOXTAIL MILLET							
<i>Setaria italica</i>	Medium	Nodding	Good	119	629	90	Lot 172-66
"	Medium	Nodding	Good	124	3075	90	P-14981
SORGHUM							
<i>Sorghum hybrid</i>	Strong	Erect	Exc.	156	1229	100	Savannah
"	Strong	Erect	Exc.	136	2465	100	X-4011
"	Strong	Erect	Exc.	128	4031	100	Milo
SOYBEAN							
<i>Glycine max</i>	Strong	Pendent	Poor	101	109	100	Acme
SUNFLOWER							
<i>Helianthus annuus</i>	Strong	Nodding	Good	106	2342	None	Armavirec
"	Strong	Nodding	Good	101	3643	None	Black Manchurian
WHEAT							
<i>Triticum aestivum</i>	Strong	Erect	Exc.	122	3554	95	Thatcher
"	Strong	Erect	Fair	122	3715	95	Fortuna
"	Strong	Erect	Fair	122	3579	95	Sheridan