Cash, Hay, Silage or Pasture Crops for Delayed Seeding

Purdue University Cooperative Extension Service
CASH, HAY, SIILAGE OR PASTURE CROPS FOR DELAYED SEEDING

Agronomy Department

Crops that may be used for delayed planting due to unfavorable weather, insect attacks, etc. are discussed according to specific needs. More detailed information may be found in references cited for the most important crops. These are obtainable from your county agent or from the Agricultural Publications Office, AES Building, Purdue. For listing of crops attacked by or resistant to chinch bugs, see page 6.

For seed sources, contact local seed dealers, certified seed growers, county agents or Agronomy Extension.

Cash Crops For Delayed Planting

SINCE CORN AND SOYBEANS ARE THE WIDELY USED CASH CROPS FOR DELAYED PLANTING, A SPECIAL MIMEOGRAPH, AX-56a, GIVES DETAILED VARIETY RECOMMENDATIONS AND SAFE PLANTING DATES FOR BOTH CROPS IN VARIOUS SECTIONS OF INDIANA.

Corn: Short-season hybrids that may be planted as late as the early part of June in northern Indiana to late June in southern counties and that have good yield possibilities are available.

Soybeans: Availability of short-season varieties of good yielding ability makes soybeans the most extensively used emergency crop for delayed seeding. They may be planted later than corn with reasonable expectancy of fair yields and satisfactory maturity. Such varieties may be planted from late June in northern counties to late July in extreme southwestern Indiana. Although delayed planting reduces the number of days to maturity (one day for each three days delay in planting), short-season varieties must be used if mature soys are to be expected in most seasons.

Buckwheat: Buckwheat is the only satisfactory grain crop for very late seeding and is not damaged by chinch bugs. It responds to good fertility but does better than other grains on infertile, poorly tilled, acid soil if climatic conditions are favorable. Seedbed preparation and culture are the same as for corn. Coarse growing weeds, such as horseweeds, give severe competition in river bottoms. Hot weather during the blossoming period blasts the blossoms so that late July seedings are most popular. In Indiana plantings generally should be completed by August 1. Drill or broadcast at a depth one to two inches, three to six pecks per acre depending on fertility. Leading varieties are the Japanese, Silver Hull and common gray buckwheat. Use about 200 pounds of the same fertilizer used for grain crops.

Combines are commonly used in harvesting buckwheat. The crop is harvested when the first formed seeds are mature or, if frost threatens, as soon as the seeds from the first blossoms are fully formed. Threshing equipment is easily adjusted to thresh buckwheat. Grain driers are essential in handling this crop for storage.
The demand for buckwheat is usually not very strong, and local markets for small amounts of seed may not be available. As a farm feed it is less valuable than wheat and should be used principally in mixtures with other grains. It is seldom fed to anything but poultry. Its hay value is doubtful. The middlings and bran may be used to some extent in dairy rotations. (See Mimeo AY-66a.)

**Grain Sorghums:** Most grain sorghums require the same growing season as corn. On dry soils or during severe droughts, sorghums are usually superior to corn in yield of grain. Delayed planting with short-season varieties has produced disappointing results.

Grain sorghum planted shallow at about six pounds per acre is handled like corn. Lodging may increase with thicker planting. It may be planted in closer rows at higher seeding rate, or drilled solid with the wheat drill.

Grain driers are essential in handling this crop for storage, even when planted at normal time. On sandy soils in southwestern Indiana, early planting often produces seed of low enough moisture content for safe storage without artificial drying. (See Mimeo AY-83 b and Extension Circular 477.)

**Horticultural Crops:** No attempt is made to include horticultural crops that have possibilities for delayed planting. Questions regarding such crops should be addressed to the Horticultural Department, Purdue University.

**Silage And Succulent Crops For Delayed Planting**

**Corn:** Corn for silage purposes may be planted later than for grain purposes.

**Corn For Forage:** Corn may be used as an emergency pasture and hay crop when seed of other forage crops is not available and where chinch bugs are not destructive. Drill solid with a grain drill at the rate of six pecks per acre or in rows with a corn planter at one peck per acre in June or early July. Early varieties are preferred. The crop may be used for cutting and feeding green for silage or may be handled as a fodder crop.

**Sunflowers:** Sunflowers are a high-yielding, proven silage crop, both palatable and nutritious if fed fresh, and are about equal ton for ton to silage made from immature corn. They are desirable only as a silage crop.

Sunflowers are: (1) not injured by chinch bugs, (2) more tolerant of drouth and cool frosty weather than corn, (3) handled by the same farm equipment as corn and (4) can be planted as late as mid-July although earlier planting gives higher yields.

Seed bed and cultural practices are the same as for corn. The corn planter with proper plates plants sunflowers satisfactorily, or the grain drill may be used by stopping up some of the spouts. The seed should be drilled one to two inches deep in rows about three feet apart. Drill from six to eight pounds per acre to have plants spaced eight to 10 inches apart in the row. Cultivate the same as corn.

Harvest for silage when plants are ONE-THIRD to ONE-HALF IN BLOOM. Earlier harvest produces wet silage, and later harvest results in woody stems and loss of leaves. Use the same harvesting equipment as for corn. Cut the silage as fine as possible.

Possibilities of growing sunflower seed as a cash crop are very uncertain. Most important local use is for bird feed. (See Mimeo AY-53a.)

**Sorghums:** Forage sorghums or sorgos are higher yielding for silage than corn, as well as highly palatable when used as fodder. Sorghums are drouth and heat resistant, and the leaves and stalks remain green until frost so that they can be ensiled over a longer period than corn.
Seed should be treated with Ceresan to prevent smut. Drill in rows 34 to 42 inches apart at about six pounds per acre soon after corn planting. June 1 is the optimum planting date, with mid-June the last date for northern Indiana and late June for southern.

Atlas, a full-season variety, is widely used in Indiana because of satisfactory yielding and superior standing ability. Morkan, developed from a cross of Atlas and Early Sumac, is two to three weeks earlier, stands well, yields less tonnage, but can be used for the shorter seasons in northern Indiana. Hybrids may supplement these recommendations.

Field Pumpkins or Squashes: Both resemble the mangel in chemical composition and are succulent feeds. They may be planted as late as early July and are chinch bug resistant. For dairy cows, 2.5 tons of pumpkins are about equal to one ton of corn silage. They are subject to freezing damage.

Hay Crops for Delayed Seeding

Soybeans: Soybeans are the best annual legume hay crop. They may be sown from corn planting time till at least as late as for soybean seed harvest (see page 1). With favorable growing conditions, mid-July seedings may make one ton of hay per acre. Seed bed should be prepared as for corn. Solid seedings are preferable for hay, and seed may be conserved, if necessary, by drilling not more than 1½ bushels per acre. (See Mimeo AY-56a and Extension Bulletin 231.)

Soybeans and Sudangrass: Farmers using sudangrass for emergency pasture can insure themselves some return from the field in case of serious chinch bug damage by drilling 10 to 15 pounds of sudangrass per acre and one bushel of soybeans. If the grass is destroyed, the soys should give a fair crop of hay or can be used for late summer pasture. For hay purposes, the mixture has not been popular but does provide a good substitute for mixed grass-legume hay.

Sudangrass: Sudangrass is about equal in feed value to timothy for hay and is an excellent emergency pasture. The late May or June seedings are preferred to later seedings, since both seed and hay yields are reduced about 1/3 by early July seedings, according to tests at Purdue. The grain drill set at 2½ to 3½ pecks per acre for wheat will sow from 25 to 30 pounds of seed which should be covered lightly. Good soil and a thoroughly prepared seed bed are desirable. Use a complete fertilizer of high nitrogen content. Pasturing very young growth or young second growth should be avoided. (See Extension Circular 420.)

Sudangrass is not a satisfactory seed crop in Indiana and will not produce seed of good quality if sown late in the season.

Millet: Millet may be seeded for hay and seed until August 1, but it is not as drought resistant as Sudangrass and is likewise susceptible to chinch bugs. Late July seedings are not likely to be damaged by chinch bugs. Common and German for uplands, Hungarian for low ground and other millets of the foxtail group are preferred. Cultural methods are similar to Sudangrass. It is harvested for hay as soon as well headed-out before seed forms. Drill 20-30 pounds per acre.

Cowpeas: Cowpeas may be expected to yield less than soybeans and are adapted only to sandy soil. They are very sensitive to frost and therefore less satisfactory than soybeans for late summer seeding. If caught by a killing frost, the crop should be cut the same day. Culture is much like soybeans, i.e. drilled solid.
Alfalfa And Clovers: Late spring sown alfalfa or clover cannot be expected to give much hay or pasture in the fall following its seeding except under very favorable growing conditions. However, these crops may be seeded from early summer till early August without a nurse crop for the next seasons hay or pasture.

Pasture Crops For Delayed Seeding

Rape: Rape is a good annual pasture crop for hogs and sheep that may be seeded from March 15 till July 1 and is not damaged by chinch bugs. It is a cool weather crop that furnishes pasture late in the fall. (For more detail, see AY-20a.)

Sudangrass: Sudangrass is one of the few good emergency summer pasture crops for Indiana. It will stand trampling and at the same time keep on providing new growth from the nodes throughout the season. Late May to early June seedings are best, but it may be seeded as much as three to four weeks later with fair results. (See Extension Circular 420.)

Hybrid Pearl Millet: Cahil-1, a hybrid pearl millet developed at the Georgia Experiment Station, has proven to be superior to sudangrass as a pasture crop on the Southern Indiana Forage Farm. It is better adapted in the south, and for that reason it is recommended in Indiana south of U.S. 50 and further north on sandy soils. Pearl millet is a giant, annual, summer growing grass that produces abundant tillers. Its chief advantage over sudangrass is freedom from leaf diseases, which occasionally are more severe in southern Indiana than further north. It should be drilled at 15 to 20 pounds of seed per acre in late May or early June on land prepared as for corn. July 1 is considered the latest seeding date for fair returns. CAUTION: Pearl millet should not be grazed closer than four to six inches. In its more mature stages it resembles the forage sorghums except the seed head.

Pasture Crops For Fall And Succeeding Spring Pastures

Grains: Winter grains should not be sown in late spring or early summer, since young succulent growth is likely to be severely damaged by chinch bugs and rust of mid summer, and July and August weather usually offers severe handicaps to growth. (For more information on winter wheat, rye, barley and oats, see Mimeo ID-12.)

Winter Wheat: Wheat is generally the first choice of the cereals for forage production. Early sown (late August to September 1), fly resistant varieties heavily fertilized with nitrogen may be used for fall pasture. Spring growth is not ready for pasture as early as rye but furnishes pasture longer. Wheat grown for grain may be pastured lightly in the spring without serious injury if growth is vigorous and soil conditions permit. Wheat is generally very palatable.

Winter Rye: Rye produces more forage early in the spring than wheat. However, muddy fields frequently make it impractical to take advantage of this early growth, with sandy soils being the exception. For late fall and early winter grazing, rye should be seeded around September 1. Balbo rye is preferred since it makes an early and more vigorous fall and spring growth. It is a "sweet" rye and produces less taint in milk than common rye.

Winter Oats and Winter Barley: In southern Indiana counties where these survive the winters, they provide pasture, with barley preferred to the oats. Both must be sown about September 1. The oats are likely to be slow starting in the spring.
Domestic Rye Grass: Domestic rye grass is a winter annual or, at best, a short-lived perennial, promising for pasture or suitable for hay in southern Indiana. It may not prove winter hardy further north. It may be seeded from August 1 to late September. Rye grass roots heavily and grows very rapidly, making it desirable for erosion control and quick pasture. The cost of seeding 15 to 20 pounds per acre is low. The crop may be seeded after any tilled crop that comes off in time, or it may be seeded in lespedeza stands, with or without seed bed preparation.

Rye grass may also be seeded in the spring, primarily as a nurse crop for other grasses and legumes where summer pasture is needed. When used in this way, a maximum of five pounds of seed per acre should be used. (See Mimeo AY-19b.)

Legumes And Grasses For Late Summer Seeding

The following are not intended to give any fall pasture.

Moisture And Soil Condition: The successful seeding of emergency crops as well as legumes and grasses depends on rainfall sufficient to wet the soil to plow depth or deeper. It may prove a waste of seed and labor to sow any of these crops on a dry seed-bed or a seed-bed that cannot be prepared by discing or plowing. Soil may be disced successfully when it is too hard or dry to plow. The practiced judgment of the farmer should enter into all of these suggestions as with all other crops.

Alfalfa: Alfalfa is the safest legume to sow in prepared ground or stubble fields during late July and August, since it is more likely to catch and hold over winter than other legumes. The soil must be sweet, however, or applications of lime must be made during the summer before seeding. Stubble fields may be prepared by discing, harrowing and cultipacking. If weeds are abundant, plowing is preferable. Seed may be broadcast and cultipacked or harrowed in, or may be sown with a grain drill. It is important that the alfalfa seed be covered approximately one inch on a thoroughly compacted seed bed and that moisture be available in order to keep the seedlings growing once they germinate. Approximately eight to 10 pounds of a winter hardy variety should be sown per acre. (See Mimeo AY-36j.)

Ladino: Ladino may be sown alone at a pound or more per acre, or with alfalfa at ½ pound per acre. (See Mimeo AY-78a.)

Red, Mammoth, Alsike and Sweet Clover: These clovers are less likely to make a successful stand from an August seeding in stubble ground than alfalfa, but enough successes are reported to justify early August seedings.

Sweet Clover Seedings In Standing Corn: Where soils are sweet and inoculated for alfalfa and sweet clover, sweet clover is occasionally sown in corn in July. It is sown on top of the ground after the corn is laid by. It has caught occasionally in corn in favorable years and is the most logical legume to sow in mid-summer in standing corn, provided the moisture supply is adequate. Rarely are successes with the other clovers and alfalfa in standing corn reported. (See Mimeo AY-130.)

Miscellaneous Legumes: Crimson and button clovers may be sown in August in extreme southwestern Indiana on well-prepared seed-beds at 15 pounds per acre, but are likely to winter kill. Like sweet clover they are rarely sown. (For information on vetch, see Mimeo AY-70.)

Lespedeza and Birdsfoot trefoil should be sown in the spring rather than in August or September.
Smooth Brome, Timothy, Red Top, Orchardgrass, Tall Fescue And Red Top: May be sown in late August or September on a seed-bed prepared as for alfalfa. When sown without a nurse crop, these grasses may make enough growth for hay and pasture uses for the ensuing year. Seeding rates for red top or timothy are four to six pounds per acre; for brome, six to eight pounds; and for fescue or orchard grass, 12 to 15 pounds per acre; all should be harrowed in. When sown with grains as a nurse crop, less growth can be expected. However; seedings of grain and grass in the fall, supplemented with legumes next spring, should give pasture for the entire season, provided growing conditions are reasonably favorable. (See Mimeoos AY-24; AY-98; AY-137; AY-150.)

Miscellaneous Hay And Pasture Crops

Many other emergency hay and pasture crops than those recommended may have merit for other regions, but are less desirable for Indiana conditions. They should only be used as a last resort when seed of the better crops is unobtainable.

Proso or Hog millet, and Barnyard or Japanese millet, also called Billion Dollar grass, are grown principally for grain. Compared to common millet or sudangrass, they are poor hay or pasture crops. Pencilaria, Cat-tail or Pearl millet is principally a soil crop. Teosinte is a tropical grass adapted only to the Gulf states. Milo, Hegari, Durra, Kafir are names of older grain sorghums now replaced by hybrids. They are not used for pasture due to their high prussic acid content.

Effects Of Chinch Bugs On Crops

Under severe chinch bug attacks or prospects, it is important to know the crops that are damaged and those that are not injured in order to make maximum use of the latter.

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<thead>
<tr>
<th>Crops Not Injured by Chinch Bugs</th>
<th>Plants Attacked by Chinch Bugs</th>
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<tbody>
<tr>
<td>Soybeans</td>
<td>Corn—field, sweet, pop</td>
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<tr>
<td>Cowpeas</td>
<td>All small grains</td>
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<tr>
<td>Any other legumes</td>
<td>Sudangrass</td>
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<td>Rape</td>
<td>Millet</td>
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<tr>
<td>Buckwheat</td>
<td>Any other grasses</td>
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<td>Sunflowers</td>
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Plants Attacked by Chinch Bugs

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