International Turfgrass Genetic Assurance Program
INSPECTION PROTOCOLS FOR INSPECTORS

Administrated by the Georgia Crop Improvement Association
Terry Hollifield
Administrator

The International Turfgrass Genetic Assurance Program (ITGAP) was developed and designed to –

> Provide a mechanism for University and privately developed turfgrass varieties to be propagated and distributed worldwide while maintaining variety identity, purity and freedom from other crops and perennial grasses and weeds.

The ITGAP process is one of Process Verification. ITGAP does not "guarantee" a genetically* and mechanically pure product to the end user. But by participating in the program, both ITGAP and the grower are able to state that the grower is producing grass to a published standard audited by a third party.

Often, but not always, ITGAP does represent the breeder, developer or institution that has licensed the grass producer to verify that clients are operating within the boundaries of the license agreement between the developer/owner/licensor of the variety and the producer.

To achieve the above goals ITGAP uses a system of field inspections and documentation to verify that the producer is in compliance with ITGAP Standards and license compliance. (See Standards) Fields are inspected to determine varietal purity (Genetic) and identity.

ITGAP inspections are conducted annually, at specific times that are optimum for identifying contaminating plants.

Fields are also inspected to determine other crop and weeds/grasses contamination.

Documentation of planting stock origin is important to establish field identification of the grass variety.

*Genetic purity is defined as: the plant population conforms to the phenotypic characteristics as described in the breeder's description.

FIELD INSPECTIONS AND REPORTING

INSPECTION TEMPLATE

The below template should be followed by the inspector when reporting findings to ITGAP. Considering that inspections are annually, the below requested information is critical. An example is attached.

Record in a narrative format-

Date
Type Inspection
- Pre plant
- Pre harvest
- Annual
- Special

Time and weather
Attendees
Relevant personnel changes
Any relevant changes in operations
Staff training
Map of site (including GPS Coordinates)

For New Fields

- Review of field history
  - Record possible problems and problem areas
- Field preparation including fumigation for new fields

Observations

- Soils
- Fences that may control unwanted entry to fields
- Roadways
- Isolation distances from other kinds or species
- Equipment washing facilities
- Relevant equipment
  - Type- dedicated mowers, harvesters, etc.
- Irrigation
  - Type- solid set, pivot, traveling gun, flood
  - Path of travel
  - Water source
    - Potential water contamination-seeds

Filed inspection

- Overall appearance
- Color
- Mowing height
- Seed head- present, %, description
- Weeds/off type plants/grasses - number and description
- Insect damage
- % coverage

Relevant cultural practices observed

- Pesticide applications
- Herbicide applications
- Fertilizer applications

Verify and report

- Harvest records
- Sales records

Quarterly reports to ITGAP
ITGAP Certificates of Assurance issued by producer (compare to sales records)

Suggestions

Remedies for non compliance issues

On Site Field Inspection Protocols

Visual turfgrass inspection is based on uniformity. Thus fields must have good uniform management across the entire production area for the inspection to be successful. In most instances specific variety identification in the field is difficult so the documentation of planting stock origin is important to establish field identification of the grass variety. Growout of field samples under uniform conditions and compared against official standards will provide confirmation of varietal trueness to type and is a great training aid for inspectors.

I. Field Inspections

Objectives

1) **Identify variety**
2) **record presence or absence of turftype contaminates**
3) **record presence or absence of undesirable other crops and perennial weeds/grasses**

A. New Fields

Step 1: Review production history (previous crops) of the field. Be aware:

a. If previous row cropland, expect perennial grass contamination especially around roads, wells, old house sites, terraces, etc. It is not unusual to find perennial grass plants in fields even that have a previous history of glysophate tolerant crops. There may be only scattered plants, but even a few have the potential of contaminating large acreages, especially if they have the capability to produce seed.

b. If previously in grass production either as turfgrass of forage, fumigation or an extended fallow period will usually be required to eliminate native contaminants.

1. Roundup and tillage timed correctly will eradicate **triploid hybrid bermudagrass** within one growing season. Multiple Roundup applications and multiple tillage operations will be required. In many cases, however, the triploid grass to be removed from a field may actually be a seed producing common type or the field is severely contaminated with common types. As a result there will be **perennial plant parts and seeds** distributed throughout the upper soil profile that must be killed.

2. All turfgrass species produce seedheads. However, the triploid hybrid bermudagrass varieties (Tifway, TifSport, TifEagle, Midiron, TifGrand, etc.) are the only turfgrass varieties that have seedheads, but no seed. The Zoysia, paspalum, centipede grasses do produce seed. If seeds are produced, some will be viable and the half life of dormant seed in the soil may extend for several years. **Therefore converting from one genus or species to another has the same potential risk as changing varieties and the inspector should be especially observant of these situations.**

c. Review certification documentation for sprig/sod <u>source</u> fields including inspection reports if possible.

Step 2: Schedule inspection timing.

a. <u>Prior to planting</u> and/or after fumigation: Inspect for native perennial grasses and/or fumigation escapes. Usually

4-6 weeks after the last tillage of the soil are required to find contaminating other crops, weeds and varieties.

b. After planting and prior to full canopy coverage. Stolons should be several inches long and total coverage 30%. Check leaf and **stolon color, internode elongation rates** and seedheads production.

c. Broadleaf and annual grass infestations reduce the inspector's ability to find contaminants.

B. Fields previously inspected as a class of Certified Turfgrass

Step 1. Review history of the field

a. Review prior inspection reports. Note previous contamination, maturity of the turf during previous inspections.

C. Established fields- Scheduling of inspection timing

a. Recently mowed (within 1-2 days) sod fields usually cannot be inspected with an acceptable level of precision.

1. Stop mowing at least 5 days prior to the inspection, but no more than 2 weeks.

2. Use herbicides to enhance color differences between plant types.

Broadleaf and annual grass infestations reduce the inspector's ability to find contaminants.

b. Traverse the field an adequate number of times to determine identity, purity and level of any contaminates.

Check previously sprayed areas to determine if the offending plants are regrowing, to include the sprayed areas as well as turf in the borders and close proximity.

Inspect outside edges of fields(s) and buffer zone(s) for intrusion or seedling contamination

c. Seed head production: Inspect for anther color, seedhead height, frequency, raceme size and color.

*****Each species has a critical inspection period when seed heads are in abundance. Seedhead production timing is controlled for most species by daylength and influenced by night temperature, mowing, growing conditions (stress), and maturity.

d. Grow-in after harvest: Inspect for stolon color, internode elongation rates, growth and color (when field is 60-70% covered.

e. Before dormancy in the fall, and/or during spring green-up: Inspect for plant color, stolon color.

*****Some of the bermudagrass types change color significantly during periods when the night temperatures are below 50° F, but before frost.

*****Cool fall and spring mornings have heavy dews and thus are ideal times to inspect for bermudagrass in other species and other species in bermudagrass.

f. After full dormancy (if it occurs): Inspect for plant color and winter weeds.

*****Dormant plant color is species and variety dependent such that contaminants can be identified during this period that are "invisible" during a normal inspection.

Examples are zoysia in Seashore Paspalum, common bermudagrass in Tifway, seashore paspalum in other species, etc.

g. Mature sod: Inspect for uniformity of color, growth rate, seedheads and leaf texture.

*****Observe areas of seedhead "mummies" that result from mower shredding. A dull mower leaves more "mummies" than a sharp mower.

*****Zoysia, centipede, Seashore Paspalum must be inspected while there is a dew on the bermudagrass leaves otherwise bermudagrass contamination will be overlooked.

***Due to harvesting and production schedules each field will not be in a stage for the best inspection during every scheduled inspection visit. Therefore records should be kept such that each field and all parts of each field are inspected during grow in and the seedhead production period at least once per three years.**

D. Field Inspection and sampling used to determine varietal purity, other crops, weeds/grasses*

Metric System

An official sampling procedure both for the field inspection and sample collection should be followed. An inspection of a field to determine compliance with the standards will include evaluation of five 9.3 square meter areas (a circle with a radius of 1.72 meters equals 9.3 square meters) in a 2 Ha. field and one additional sample for each succeeding 2 Ha. For example: an 8 Ha. field will require 7 samples; a 20 ha.will require 14 sample sites for visual evaluation. No more than 20 sample counts are required regardless of field size. The sites for visual evaluation should be selected based on a specific travel pattern across the field rather than random wandering (field borders, loading areas, entrance to field, etc). All areas of contamination found whether located within the official sample area or not should be marked for eradication and noted on the inspection report.

* all numbers rounded to nearest tenth

Standard US System

I. Field Inspection and sampling

An official sampling procedure both for the field inspection and sample collection should be followed. An inspection of a field to determine compliance with certification standards will include evaluation of five 100 square foot areas in a five acre field and one additional sample for each succeeding five acres. Thus a 50 acre field will require 14 sample sites for visual evaluation. The sites for visual evaluation should be selected based on a specific travel pattern across the field rather than random wandering. However field borders, loading areas, entrance to field, must be inspected as these are frequently areas of contamination from trucks, mowers, harvesters, etc. All areas of contamination found whether located within the official sample area or not should be marked for eradication and noted on the inspection report.

Aids that will help the inspector

A. Sprig vs. sod fields

a. Sprig fields are extremely difficult to inspect with a high level of confidence. There are two complicating factors: mowing height and frequency usually are detrimental to the inspection process and the harvesting equipment reduces the contaminating plant to a size that is difficult to find. In a typical sprig harvesting operation, some of the stolons are removed to be planted elsewhere, but others remain in the fields and results in new areas of contamination starting as small single sprig plants. One study indicated that a sprig harvester would create a minimum of 14 new plants from a contaminant less than 4" in diameter. Frequent harvests schedules will prevent contaminate plants from ever becoming large enough to find and the new plants are distributed almost randomly over the fields. There is an example of a Tifdwarf field that was contaminated with a more aggressive plant and after several years of multiple harvests, the entire field appeared to be uniform, but with only 20% of the population being the original Tifdwarf. **Using seed heads is an excellent tool but usually cannot be used in sprig fields. To overcome inspection difficulties, develop a multiyear plan to have part, perhaps one third of the field, managed as a sod field, to encourage seed head production.**

B. Inspection timing

Recently mowed (within 1-2 days) sod fields usually cannot be inspected with an acceptable level of precision.

1. Stop mowing at least 5 days prior to the inspection, but no more than 2 weeks.

2. Use herbicides to enhance color differences between plant types.

Broadleaf and annual grass infestations reduce the inspector's ability to find contaminants.

C. Sanitation tips

a. Field borders should be maintained between certified varieties and non-production areas.

The inspection should determine if the borders are adequately maintained and free of any plants.

b. Does irrigation equipment move from low non producing areas into the production field or from one variety to another? If so, expect contamination in and around wheel tracks.

c. Are facilities available to wash equipment between varieties and is there an established procedure for washing equipment? If not, expect contamination in all fields especially if common bermudagrass, zoysia, centipede, seashore paspalum or other seed producing varieties are growing on the farm.

d. Does runoff water move from roads into fields or from one variety to another? Is any part of a field subject to flooding? If so, expect contamination in the areas of water overflow.

D. Contaminant growth patterns

a. **Contamination** introduced in the planting stock will be most likely found in rows relating to the planting pattern. Contamination from seed spread by mowers, rollers or other equipment may appear randomly across the field.

b. Spread of contaminants by harvesting equipment will generally be in the direction that the harvester traveled.

c. Contamination from spreader trucks applying lime or fertilizers will likely not be a straight line but a pattern can usually be found.

E. Lighting conditions are extremely important for good field inspection

a. Some inspectors have a rule of thumb that one's shadow should be from 50%-100% of a person's height for best inspections. Long shadows in the morning are less detrimental to good inspection conditions than long shadows in the afternoon.

b. In some cases the sun needs to be at one's back and other cases one should be facing the sun. Color differences are usually best seen with the sun at one's back, growth differences are usually best seen facing the sun. If dew is being used as an indicator, the inspector should be facing the sun.

c. Moderately overcast days are ideal for good inspections.

II. Species/Variety Identification

One of the greatest challenges for the turfgrass inspector is developing an overall understanding of the various morphological characteristics of individual varieties. The next most challenging opportunity is learning what some of the standard varieties look like and applying that information to lesser known varieties. One of the difficulties is that colors change with temperature, fertility, mowing, pest damage, stage of growth and management conditions. It will be very difficult to categorize leaf colors for field identification purposes; however, anther color and stolon color are rarely influenced by fertility and management, and should be consistent within a range of temperatures and across most management practices.

The following discussion for the most part does not provide specific identification characteristics, but rather ranges and relationships between varieties.

A. Bermudagrass

a. Genetics: Bermudagrass plants occur as diploid (2N=18) through hexaploid (2N=54). All current seeded varieties, most contaminants, a lot of non-certified 419, and many university and privately released vegetative cultivars are tetraploids or selections from “common” Bermuda. Each of these ecotypes is technically a hybrid since the original seed arose from two genetically diverse parents.

In contrast, the triploid hybrids are Interspecific hybrids and therefore in the Cynodon genus have an non-symmetrical set of chromosomes (N=27). All diploids (N=18), tetraploids (N=36) and hexploids (N=54) are capable of producing seed, with the amounts varying from infrequent to commercially feasible seed production. There is a greater chance for significant seed production when diverse genotypes or populations are present rather than vegetatively propagated single clones. The triploid hybrids (N=27) produce varying amounts of seedheads, however, the ovule is sterile and no pollen is produced, thus the plant is sterile. There are no known examples of a true triploid bermudagrass plant producing seed. The common statement that a bermudagrass variety produces no viable seeds is a misstatement and should be stated as: seeds are produced or seeds are not produced.

b. Seedheads: Each seedhead has three to five branches (racemes) extending from a central point. There is great variation in branch length and location within or above the canopy between varieties, but with relatively good uniformity within a variety and set of environmental conditions. Individual triploid hybrid varieties vary between three or four racemes, while tetrploids have 3, 4, or 5. The number of racemes per inflorescence is not considered to be a reliable morphological identifier for bermudagrass, with the possible exception of the varieties that normally have five racemes (Tifton 10).

1. Seedhead color is an excellent inspection characteristic and should be utilized as often as possible during the May to June period of intense seed head production. Anther color varies from white, through yellow to dark purple. Stigma color is usually purple. The raceme back rib is green to dark purple.

To enhance seedhead inspection a field should be mowed to uniformity then at the proper time, mowing stopped for 1-2 weeks. Timing of this operation is critical and can be predicted east and west, but not as well north and south. Some varieties have higher rates of seedhead production in lower latitudes as compared to higher latitudes, ex. Tifgreen II. Warm nights appear to move the critical dates earlier in the season.

2. The sterile anthers of triploid plants are small and misshapen, while the fertile anthers of diploids, tetraploids and hexaploids are well formed and shed pollen. Pollen from fertile genotype should be visible with a hand lens early in the morning when a spiklet first flowers.

3. There is a lot of variation between varieties relative to the number of seedheads produced and the timing of the major flush. <u>The common types (tetraploids) have a tendency to produce seedheads earlier than the triploids and throughout the growing season,</u> <u>This fact should be considered when scheduling, especially if there is a past history of "common Bermuda" contamination</u>.
Whereas the triploids normally have a flush in late spring/early summer and again in late summer. The superdwarf triploids, produce very few seedheads and many times specific management is required to encourage seedhead production. However, under certain environmental conditions (stress from water, fertility or traffic) all varieties are capable of producing seedheads at any time during the growing season. **It is essential for the competent turfgrass inspector to be able to recognize the general seedhead characteristics of the important varieties and also variations in seedheads that suggest contamination.**

c. Stolon characteristics: Stolon color varies from green to purple to red at the internodes and along the entire internode. Cool temperatures will intensify stolon coloration; however, the comparative warm weather color relationship between two genotypes will be similar in cool weather. **Stolon color is an excellent inspection tool during initial grow-in or grow-in after harvest.**

d. Leaf color: Leaf color varies from very dark green (GN1) to blue green (Tifton 10) to dark green (Tifway) to light green (Tifgreen). The common types have similar color variations. Many common bermudagrass varieties lose their green color in cool temperatures faster than the triploids. Some varieties exhibit a purple cast with night temperatures below 50° F.
Inspection during the fall will allow identification of contaminants that are mostly invisible during warm months. The herbicide MSMA frequently causes greater color loss in some genotypes than others. Thus it can be used to enhance color differences, especially with some of the contaminants that regularly occur in Tifdwarf. Temperature and fertility may interact with the MSMA effect causing greater or lesser color differences. **Leaf color is a poor tool for varietal identification, but is quite useful in identifying contaminants in an otherwise uniform field of turf.**

e. Dormant leaf color: Light to dark straw-colored leaves. Many of the common bermudagrass contaminants in triploid hybrid fields have sufficient color differences to allow differentiation of genotypes and varieties. In addition bermudagrass in other species can be readily identified as well as bermudagrass contamination in fallow fields during dormant periods. **Dormant leaf color traditionally has not been utilized as an inspection tool, but it is quite useful to separate species and several varieties in mature sod at full dormancy.**

f. Leaf texture: Leaf texture varies like stolon color and leaf color from very fine to very coarse. It is difficult to identify a variety from leaf texture alone, but a good knowledge of the growth characteristics of the variety being inspected will allow identification of contaminant plants. It is relatively easy to find coarser textured plants in fine textured varieties, but very difficult to identify a fine textured contaminant in medium coarse varieties as Tifway. **Leaf texture can be used to identify contaminants**

during grow-in, but the differences have to be relatively large to use this characteristic at maturity.

g. Leaf texture, stolon growth rates: The growth rate is generally related to leaf texture, with fine-textured plants growing slower and having shorter internodes than coarse-textured plants (Tifgreen is an exception). **Growth rate is an important inspection tool both during growing and at maturity.** <u>However, at maturity the mowing must be stopped for several days to allow the faster growing plants to be visible above the canopy.</u> Inspection of newly-mowed turf is an exercise in futility. When using growth rate as the sole identifier it is difficult, if not impossible, to find a slow-growing variety in a faster-growing variety in fields with good sod density, example: TifEagle in Tifdwarf, Tifdwarf in Tifway.

h. Other growth characteristics that influence inspection effectiveness:

> **1.** Plants growing around weeds, irrigation risers or other shade-producing objects will be etiolated with longer and narrower leaves and longer internodes.
>
> **2.** Glyphosate may cause dwarfism in bermudagrass around the perimeter of sprayed areas.
>
> **3.** Somatic variants occur on a regular basis in varieties and ecotypes derived from Tifgreen (328) and Tifdwarf. It is generally accepted that these plants are genomic mutations, but there is no data to support the mutation hypothesis. Other varieties including Tifway and TifSport are stable with no definite examples of mutations. The contaminants found in Tifway are usually tetraploids or a Tifgreen-type plant.

4. Tifway and TifSport have a characteristic of producing both large and small stolons during growing. A cursory inspection would suggest the presence of a contaminant, but closer evaluation finds both the small stolons and large stolons arising from the parent plant.

5. Just prior to a flush of seed heads, Tifway and TifSport will have single shoot emerging from the canopy in otherwise uniform fields. Under careful observation these emerging shoots will be found to be indicators of the early stages of seed head formation.

6. TifGrand Bermuda grass is a prolific seed head producer. Seed head production tends to be erratic within the field

B. Centipede

a. Genetics: Currently there is only one species of centipede accepted for certification, *Eremochloa ophiuroides*. The majority of the Centipede seed and sod sales are non-certified common types. Several varieties have been released from University research programs, but only TifBlair has been successfully produced and marketed.

b. Plant characteristics: There are only insignificant morphological differences between the common types and TifBlair. TifBlair has slightly taller seed heads, more vigorous seedling growth and greater cold tolerance, but these characteristics have little value in an inspection program. Both TifBlair and Common have purple stolons and purple anthers with an occasional green stolon/yellow anther seedhead. The frequency of yellow anther seedheads in TifBlair should provide a morphological indicator to identify TifBlair fields. It is not possible, however, to identify common plants in TifBlair or visa versa. In addition, there may be populations of common that have yellow anther frequencies similar to TifBlair. Thus the paper work trail documenting the origin of planting seed is about the only positive way to confirm whether a field is TifBlair or common.

C. Seashore Paspalum

a. Genetics: The paspalum genus is large diverse genus comprising over 300 individual species. In contrast to the Cynodon genus (common bermudagrass), interspecific fertilization is rare. In addition self fertilization is rare, but cross fertilization with diverse genotypes is common and may result in significant seed production. The primary turf species is *Paspalum vaginatum*, a stoloniferous and rhizomatous plant with the potential of high levels of salt tolerance. Some ecotypes can grow quite well in 35,000ppm saline sea water.

b. Distinguishing morphological characteristics:

1. Seedheads: All seashore paspalum varieties have the characteristic paspalum two raceme seed head with black anthers, most are relatively the same size and height. The frequency and density of seedheads varies among varieties. Seedheads are produced throughout the growing season whenever mowing is stopped and during stress periods.

There are differences in anther color with purple and green being the primary colors.

2. Stolon characteristics: There are varieties with light purple and, what appears to be, green internodes. Internode length and stolon diameter are differences that can also be observed and under controlled conditions used as identifiers.

3. **Leaf characteristics:** There is considerable variation in leaf color, texture and growth rates between the commercial varieties, but the variation is much less than in bermudagrass populations. Variants have been noted in populations of SeaIsle I, SeaIsle 2000, Seadwarf and Salam. These were usually lighter green color, coarser textured or with faster leaf growth than the named variety. Close inspection during growing, and under controlled mowing conditions, are required to differentiate the variants from the base population. Most of these variants have been assumed to arise from seedlings.

c. Other important considerations:

1. The prolific seedhead production in many paspalum varieties will cause difficulty in making effective inspections if the inspection follows mowing by more than a few days.

2. Seashore paspalum has the unique characteristics of adapting to a mowing regime better than most species. For example: SeaIsle 2000 during unrestricted growth, is a coarse textured, large stolon variety, so much so that one would not expect it to perform under greens management. However when placed under a close mowing regime the stolons are not apparent and leaf texture is equal to Tifdwarf with density equal or greater than TifEagle. In contrast, when coarse textured bermudagrass plants like Tifway or Tifton 10 are closely mowed, density degrades to unacceptable levels.

3. There appears to be significant differences among varieties related to disease susceptibility.

D. Zoysia

a. Genetics: There are six species in the zoysia genus, all have 40 chromosomes and most cross pollinate readily. The principal species in the US are *Z. japonica, Z. matrella, Z. manilla, and Z. tenuifolia. Japonica* is the most coarse textured and *tenuifolia* is the most fine textured.

DNA fingerprint analysis of most recently released varieties suggest that they are Interspecific hybrids and thus there is a continuum of plant types from the most fine textured to the most coarse textured.

b. Distinguishing morphological characteristics:

1. Seedheads: In contrast to most warm season grasses, the Zoysia varieties are short-day plants and thus flower very early in the spring and late in the fall. The inflorescence is a single raceme. The raceme height above the canopy is related to the growth rate of the variety and thus can be an identifying characteristic. The majority of the varieties have purple anthers, with a small percentage having yellow anthers.

2. Stolon characteristics: Stolons vary in color (purple, yellow, green) diameter, internode length and growth rates. Each are characteristic of a variety and can be used as morphological identifiers.

3. Leaf characteristics: Leaves, like stolons, vary in color, growth rate and texture. Leaf color is normally light green with variations from very light green, Emerald variety, to medium dark green, Diamond variety. Likewise, the leaf growth rate varies such that variants should be visible after cessation of mowing for several weeks. Some Zoysia varieties also have a tendency for leaf shredding after mowing and under the proper conditions this characteristic should be used as an identifier. There are several other characteristics, example: leaf rolling, that are related to species designations which could be used as variety identifiers.

4. **Leaf and stolon/rhizome/root diseases:** Zoysia varieties have varying susceptibility to several leaf and patch diseases and the absence or presence of these diseases is a potential varietal identifier.

E. Contaminants or mixtures of different genera

a. Bermudagrass collects dew on its leaves, in contrast to Seashore Paspalum, Centipede and Zoysia. As a result mixtures of bermudagrass in either of the three other genera or vice versa are easily identified when there is a dew present.

b. Common bermudagrass seedheads are very evident when common bermudagrass contaminates other genera.

c. Each genera has its own characteristic dormant leaf color. There is variation within each genus, but little if any overlap with other genera. Zoysia has the lightest color and can be described as very light straw, bermudagrass is normally described as being straw-colored, centipede is somewhat darker than bermudagrass and seashore paspalum is considered to be dark brown. Lighter colored plants in a dark base population are easier to identify than vice versa.

d. In early spring, Centipede, is relatively easy to identify in seashore paspalum as centipede begins its growth slightly earlier than seashore paspalum.

III. Exit interview

Exit interviews can be the best teaching tool available to the inspector. First, make certain that the interview is conducted with a person who has the authority to make decisions and changes.

Whereas an inspector will likely not have time to present a completed written field report for the exit interview use the below template for the exit interview. Leave a copy with the producer if possible and add a copy to your final report. Present each field report to the producer and make any positive comments applicable. The inspector should use the session as an opportunity to explain reasons for rejecting a field and remedies required.

Template
Record in a narrative format-

Date
Type Inspection
- Pre plant
- Pre harvest
- Annual
- Special

List "problem" areas or make positive statements
- Roadways
- Isolation distances from other kinds or species
- Equipment washing facilities
- Non dedicated or dedicated equipment
- Irrigation
  - Path of travel
  - Water source
    - Potential water contamination-seeds

Filed inspection

- Overall appearance
- Weeds/off type plants/grasses - number and description

Relevant cultural practices observed (good opportunity to note positive efforts)

- Pesticide applications
- Herbicide applications
- Fertilizer applications

Any issues relating to:

- Harvest records
- Sales records
- Quarterly reports to ITGAP
- ITGAP Certificates of Assurance issued by producer (compare to sales records)

Suggestions

Non compliance issues and Remedies for non compliance issues

NOTES ON FUMIGATION

Methyl Bromide fumigation is the most effective fumigant for removing perennial plants and seed. However, there are failures, usually in small areas, but sometimes almost an entire field. It is best to incorporate a waiting period after fumigation and before planting especially in field that have previously grown a grass crop. During the waiting period the field should be irrigated, not tilled and inspected for general grassy or broadleaf plants. Plants are normally controlled by methyl bromide, if present, may suggest fumigation failure. Rapid germination of hard seeded legumes as clover, lespedeza and some common weeds like sicklepod and morning glory is expected following fumigation. A waiting period of seven to 10 days after tarp removal and irrigation is adequate. However, seedling plants of perennial grass species are difficult to identify prior to stolon formation and the waiting period may have to be increased in certain instances and under these conditions the broadleaf weeds should be controlled with selective broadleaf herbicides.

Fumigants as Metham Sodium, chloropricrin and others are effective under ideal conditions, but less effective than methyl bromide under marginal conditions. Therefore it is extremely important to have a waiting period of at least two weeks after fumigation with non-traditional products. Close evaluation, not only of germinating seedlings, but also perennial plants is necessary to identify areas that will contain potential contaminants.