

Managing Yellow and Purple Nutsedge in Florida Strawberry Fields¹

Andrew W. MacRae²

As growers continue their transition to methyl bromide alternatives, weed problems in strawberry fields will increase. Two of the more troublesome weeds that are anticipated are yellow and purple nutsedge (Figures 1 and 2). These weeds are perennial weeds that spread via underground roots called rhizomes and vegetatively produced structures known as tubers. Yellow nutsedge produces fewer but larger tubers than purple nutsedge. These tubers are produced in chains along the rhizomes and can remain dormant in the soil for several years. Fumigation targets these dormant tubers to maximize control of nutsedge. Nutsedge is well adapted for growth in plasticulture production systems. It is able to penetrate the majority of commercially used plastic mulches and produces large numbers of tubers by stealing the water and fertilizer intended for strawberry plants.

It is important to keep any nutsedge population as small as possible, even to the point of having a zero-tolerance policy for any infestation. The grower should focus on year-round control to prevent wide-scale establishment of this weed. This involves selecting and correctly applying a good fumigant system, spot spraying, applying postharvest herbicides and/or fumigants, and implementing



Figure 1. Yellow and purple nutsedge inflorescence.

fallow period tillage, herbicide, and cover crop programs.

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2. Andrew W. MacRae, assistant professor, UF/IFAS GCREC



Figure 2. Yellow nutsedge emerging in a strawberry field.

Fumigation

For areas of a field that have had nutsedge problems in the past, it is important to use a full fumigant system. Fumigant systems consisting of only 1,3-dichloropropene and/or chloropicrin will not provide satisfactory control of nutsedge. In long-term testing conducted in Georgia, the use of these systems actually increased the amount of nutsedge present in the field after four years of use. These systems may include a combination of Telone[®] II and 100% chloropicrin or may come premixed, like Telone[®] C35 and PicClor[®] 60.

Methyl bromide 50:50 provides good control of nutsedge, but will soon be phased out. Midas[®] 50:50 provides good to excellent control, and the soon to be registered product Paladin[®] Pic will provide excellent control. The use of a 3-Way system consisting of Telone[®] II, chloropicrin, and KPam[®] or Vapam[®] will also provide good to excellent control. When using KPam[®] or Vapam[®], a minicoulter rig provides the best control of nutsedge; however, if using drip applications, good control can be achieved if the grower uses two drip tapes to maximize coverage of the bed.

Yellow and purple nutsedge will be a major factor in future fumigation decisions. Preventing this weed from obtaining a foothold may allow strawberry growers to use a reduced fumigant system, provided they are willing to spend time removing any escaped nutsedge populations from their production fields.

In Crop

If nutsedge is emerging through plastic mulch, it is important to spot spray a glyphosate product (Roundup[®], Touchdown HiTech[®], Glyphos Xtra[®], etc.) to kill the top growth as well as the tubers the plant is producing. Hand pulling will only result in removing the top growth, and repeat pulling may take all season before exhausting the root reserves of an established plant.

Postharvest

At the end of the growing season, either an application of a fumigant in the drip tape or a postemergent application of a glyphosate product will be needed to reduce the population of nutsedge tubers present in the soil. The use of a fumigant can also help in reducing disease and nematode populations.

Fallow Period

Maintaining control of nutsedge requires an active management plan. The key is to break the rhizome of tubers so as to maximize nutsedge emergence at a time when control measures can be applied. For example, use tillage to break the rhizome and follow that with an application of glyphosate and follow that with an application of glyphosate after the nutsedge shoots have emerged. After knocking back the population of nutsedge, seed a cover crop that will form a crop canopy quickly, preventing further emergence of nutsedge. Broadleaf cover crops tend to develop thicker crop canopies and are well suited to preventing light from reaching the soil surface, thus reducing nutsedge emergence and growth.

Initial infestations of nutsedge will come from the edges of the field (Figure 3) and may obtain a foothold at the end of the rows where the fumigant has not been properly applied. It is important to maintain good weed management practices around the edges of the field. A little time spent from now on can help reduce the possibility of a nutsedge population increasing to the point where a full fumigant system will be required to keep the population below damaging levels.



Figure 3. Yellow nutsedge infestation from the edge of a strawberry field.